Welcome to Portland Community College!

Portland Community College has just completed a year of celebration in honor of our 50th anniversary. Since 1961, well over a million students have called on PCC for a college education, a new career or for personal enrichment. Today, we are the largest post-secondary institution in Oregon. PCC really does stand for opportunity — Then. Now. Always.

You may be looking for an affordable way to start on a four-year degree, to train for a new career or to upgrade your skills for your current job. Maybe you are a high school student hoping for an alternative route to your diploma or to supplement your education with college-level courses. Whatever brings you here, PCC has something to offer. This catalog can be a great tool as you begin planning your path to opportunity.

The vision PCC’s founders crafted in the early 1960s lives on today. Our goal is to better serve this community, to help drive the economic growth of the region and to train the workforce of today and of tomorrow. That starts with you. Welcome to PCC.

Dr. Preston Pulliams, PCC District President

Portland Community College Mission Statement

Portland Community College advances the region’s long-term vitality by delivering accessible, quality education to support the academic, professional, and personal development of the diverse students and communities we serve.

We strive to achieve our mission through the core themes of Access and Diversity, Student Success, Quality Education, and Economic Development and Sustainability.

2011-12 Board of Directors

Denise Frisbee, Zone 1
Harold Williams, Zone 2
Bob Palmer, Zone 3
Jim Harper, Zone 4
David Squire, Zone 5
Gene Pitts, Zone 6
Deanna Palm, Zone 7

DISTRICT LOCATIONS

CAMPUS

SYLVANIA (SY)
12000 SW 49th Ave.
Bus: 44, 78

ROCK CREEK (RC)
17705 NW Springville Rd.
Bus: 52, 67

CASCADE (CA)
705 N Killingsworth St.
Bus: 4, 40, 72 Max: Yellow

CENTERS

CLIMB (C)
1626 SE Water Ave.
Bus: 4, 6, 10, 14, 31, 32, 33, 41

COLUMBIA COUNTY (CC)
Classes offered in Scappoose and St. Helens

DOWNTOWN (DT)
722 SW 2nd Ave.
Bus: 15, 51 MAX: Blue & Red

NEWBERG (N)
135 Werth Blvd.

PORTLAND METROPOLITAN WORKFORCE TRAINING CENTER (PM)
5600 NE 42nd Ave.
Bus: 72, 75

HILLSBORO (H)
775 SE Baseline St.
Bus: 47, 48, 57 MAX: Blue

SOUTHEAST (SE)
2305 SE 82nd Ave.
Bus: 4, 72

WILLOW CREEK (WC)
241 SW Edgeway Dr.
Bus: 47, 48, 52, 59, 88 MAX: Blue

Verify bus information at trimet.org

COVER ART: The “Diamond Pride” designs

In honor of PCC’s 50th Anniversary, students from the Graphic Design Program were asked to take the “PCC diamond” — the long-standing symbol embedded in the college logo — and interpret it for each of PCC’s academic programs, from Accounting to Writing. The result is a remarkable collection of diamonds representing the unique characteristics of each program, yet reflecting the unifying mission of PCC. The diamond represents opportunity and the transformative power of education.

This year’s catalog cover features just a few of the designs. To learn more about the Diamond Pride project and to view all the diamond designs, visit opportunity.pcc.edu/diamond-pride.

Dr. Preston Pulliams, PCC District President
TEN STEPS TO ACHIEVING YOUR DREAM

STEP 1–APPLY FOR ADMISSION

www.pcc.edu/admissions

Apply online or in-person at one of our Admissions Offices. For campus locations refer to the website. If you’re participating in one of our innovative dual enrollment programs, you’ll use a different application. For more information, visit a PCC Admissions Office or go to www.pcc.edu/dual.

ADMISSION CRITERIA

RESIDENCY

A residence is a place in which a person resides—a dwelling place or abode—essentially a house or apartment. Residence is not established by attendance at a college.

- In-state student: a United States citizen, immigrant, or permanent resident who has established and maintains residency in Oregon, Washington, Idaho, Nevada, or California.
- Out-of-state student: a United States citizen, immigrant, or permanent resident who has not established or does not maintain residency in Oregon, Washington, Idaho, Nevada, or California.
- International student: citizen of another country.

NEW STUDENTS

Portland Community College has an open admissions policy, meaning that anyone may enroll at the college. Previous college experience or a high school diploma is not necessary for entry. However, certain programs or courses may require prerequisite course work, department approval or an instructor’s signature for enrollment.

- Students performing below requisite skill level will be required to enroll in courses to upgrade their skills.
- Several programs at PCC require students to complete practical experience or field training at a medical or other facility. Students will NOT be allowed into these facilities unless they have passed a Criminal History Check (CHC). Students who do not pass the CHC may not be eligible to complete training at affiliated practicum sites, to sit for licensure or certification exams, or be hired for some professional positions. If you believe that your past history may interfere with your ability to complete the program of study or to obtain licensure or certification in your chosen field, you should contact the appropriate state board or the program director.

SPECIAL ADMISSIONS PROGRAMS

INTERNATIONAL STUDENTS

www.pcc.edu/about/international/admissions

International student applicants must complete all correspondence and forms in English. To be considered for admission to PCC, please submit the following to the Office of International Education. Forms are available online at the website.

1. International Student Application for Admission form.
2. $50 application fee, which is non-refundable and nontransferable cashier’s check, money order, or debit or credit card. Personal checks will be accepted in US dollars. Cash is not accepted.
5. Official transcripts from high schools, other colleges or universities, or language program.
6. For transfer students and students requesting change of status:
   a. Copy of I-94, SEVIS I-20, ID page of passport and U.S. Visa page
   b. SEVIS Transfer Form

When all of the above has been received, the applicant will be considered for admission. (A SEVIS I-20 form will not be issued to any individual until all the required information has been received and approved.)

All students must enroll by the last scheduled day of registration each term. International students must pursue a full course of study (12 credit or more per term) to maintain F-1 visa status.

International students must pay all tuition and fees by the correspondent deadlines outlined in the schedule of classes. Payment of out-of-country drafts must clear the Business Office approval procedure before registration is final. Students requesting this billing service must file authorization forms with the Business Office prior to registration. Deferred tuition is not available for international students.

It is the responsibility of each student with transcripts (credits) from schools outside of the United States to have them translated and evaluated course by course for acceptance toward a Portland Community College certificate or degree, by a service that is a member of the National Association of Credential Evaluation Services.

UNDERAGE STUDENTS

Students ages 16 and 17 who do not have a high school diploma or GED, must complete some additional steps before they are eligible to register for classes. A letter of permission from your high school or verification from your ESD (if you are home schooled) is required prior to registration. Students seeking a GED or diploma from PCC should contact those departments for appropriate steps toward admission and registration.

STUDENTS UNDER 16 YEARS OF AGE

www.pcc.edu/admissions/under-16.html

Students are strongly encouraged to complete all the possible course work within their school district before pursuing classes at PCC. College level coursework may not be appropriate for non-college aged students.

The admissions policy of Portland Community College is to admit students who are 18 years of age or older. Applicants under the age of 16 will need to submit a request for exception to the high school admissions policy to the campus they wish to attend. There is no guarantee that requests will be approved. It is the ultimate
decision of the Dean of Students’ Office to approve exception requests.

Requests for exception to the admission policy should include:

- A student letter stating reason for requesting exception.
- Letter(s) of recommendation from your school counselor or administrator, which addresses both academic and behavioral preparedness for an adult learning environment.
- If you wish to be admitted to PCC in lieu of high school you must also provide a copy of Exemption from Compulsory Attendance from your high school or ESD.

If you are home schooled you are required to submit:

- A student letter stating reason for requesting exception.
- A letter of recommendation from your educator or tutor which addresses academic preparedness.
- A letter from someone other than your parent or guardian that addresses behavioral preparedness for an adult learning environment.
- A copy of Exemption from Compulsory Attendance from your high school or ESD.
- Once you have all the materials gathered, call the high school contact at the campus you wish to attend to schedule an appointment. Both you and your parent/guardian are required to attend.

Based on this initial meeting a decision will be made as to whether or not you can continue in the admissions process. If approved to move forward you will be asked to follow these steps in this order:

1. Apply for admission.
2. Take a college placement exam. Regardless of what type of classes you intend to take at PCC, you must place at the minimum levels of Writing 115, Reading 115, and Math 60. Desired classes may require additional prerequisites.
3. Meet with your campus contact to review test scores and complete the Consent to Release and Underage Enrollment forms.
4. Complete a New Student Orientation.
5. Submit desired course(s) to campus contact who will seek required instructor approval for enrollment. Please do not approach instructor directly.
6. Campus contact will inform you if instructor permission was received.
7. Obtain and complete Underage Registration form from your campus contact. Registration for course(s) will not be permitted until one week prior to start of term. Enrollment is based on space available in course(s) at that time.

**Please note:** All above steps must be completed one week prior to the end of the current term for the following term’s enrollment.

**HIGH SCHOOL PARTNERSHIPS**

**PCC DUAL CREDIT**

971-722-7737

[www.pcc.edu/pavtec/dual](http://www.pcc.edu/pavtec/dual)

PCC Dual Credit is a program whereby high school students may earn PCC credits for advanced level courses that are taught at their local high schools by PCC qualified instructors. These classes are equivalent to courses offered on a PCC campus. High school students may obtain PCC credits in these “articulated” (dual credit) courses, at no cost, saving both time and money in their post secondary educational pursuits.

About 50 high school sites (some outside of the PCC district) participate in this dual credit program. Some high schools offer Career and Technical Education (CTE) articulated (dual credit) courses connected to more than 25 PCC CTE programs. Examples include Drafting, Office Systems, Health Services, Early Childhood Education, Auto Service Technology, Building Construction, Engineering, Machine Manufacturing, Fire Protection, and Welding.

Some of the high schools also offer courses connected to one or more of the 20 PCC Lower Division Transfer subject areas. Examples include American Sign Language, Biology, Computer Science, Dance, English, Mathematics, Writing, and History.

Dual Credit is one of several opportunities for high school students to earn PCC credit. Others include the Expanded Options Program.

**EXPANDED OPTIONS PROGRAM (EOP)**

PCC partners with local high schools to provide opportunities for high school students to take regular PCC courses through the Expanded Options Program (EOP). The EOP was established by the Oregon Legislature in 2005 with the enactment of Senate Bill 300 and modified by the Legislature in 2007 with Senate Bill 23.

The EOP provides the opportunity for high school juniors and seniors who are at least 16 years of age and currently enrolled in high school to take regular PCC classes that relate to the career and educational plan of the student at the expense of his/her local school district.

To take advantage of the EOP a student must first consult with his/her high school counselor and meet the high school’s criteria for EOP participation. After approval and referral by the authorized high school contact, the student applies to PCC through the PCC Admissions Office and eventually enrolls in regular PCC courses.

EOP is one of several opportunities for high school students to earn PCC credit. Others include the PCC Dual Credit program.

**OTHER PROGRAMS**

For a complete list of high school programs please visit [www.pcc.edu/pavtec/about/default.htm](http://www.pcc.edu/pavtec/about/default.htm) to learn about high school completion options and getting a head start on college.
DEGREE PARTNERSHIP PROGRAMS
www.pcc.edu/admissions/dual

PCC OFFERS DUAL ADMISSION OR CO-ENROLLMENT PROGRAMS WITH:
- Portland State University
- Oregon State University
- Oregon Institute of Technology
- Western Governors University
- Concordia University
- Marylhurst University
- Pacific University
- Linfield College - Degree Completion, Portland Campus

The benefits of these programs include:
- One application process for both Portland Community College and partner schools.
- Advising available at either institution.
- Flexible scheduling with access to classes at both institutions.
- Opportunity to access services and participate in college life on both campuses.
- Coordinated financial aid and scholarships for qualified students.
- Access to library and computer lab resources on both schools when attending classes at that institution.
- Skill-building through preparatory courses at Portland Community College and lower division courses at either Portland Community College or the four-year institution.
- Easier transition from community college to university.
- More affordable route to a degree.

STEP 2–MAKE PAYMENT ARRANGEMENTS
www.pcc.edu/tuition

College is expensive, but tuition help is available. It is never too early to prepare a budget and seek financial assistance.

TUITION AND FEES
Resident Tuition: To qualify for resident tuition, students must be an American citizen, immigrant, or permanent resident who has established and maintains residency in Oregon, or the bordering states of California, Nevada, Idaho, or Washington. You must be able to provide proof of residency.

Tuition – Other: Tuition and fees for non-credit and CEU courses are listed in the course description in the schedule of classes.

OTHER COMMON FEES
www.pcc.edu/resources/ tuition-fees/ other-fees.html
There are other fees that may apply during your time as a student, please view the website for details about these fees.

FINANCIAL AID
www.pcc.edu/fa

There’s a good chance you qualify for financial assistance. Students eligible for student aid must be regularly admitted and enrolled in an eligible program. Please see www.pcc.edu/enroll/ paying-for-college/financial-aid/apply/eligible-programs.html for financial aid eligible programs at PCC.

Visit www.fafsa.gov to complete a federal aid application.

Remember, you must submit a new financial aid application for each academic year (fall through summer).

You must use MyPCC to select your refund option. For more information, visit www.pcc.edu/enroll/paying-for-college/ financial-aid/

VETERANS’ BENEFITS
www.pcc.edu/vets

Students using any type of Federal Veterans Administration (VA) Education Benefit are required to have all prior credit history evaluated. It is the student’s responsibility to request official transcripts from all previous colleges and submit them to the PCC Student Records Office. Students must also complete and submit the Transfer Credit Evaluation request found on MyPCC. A student’s first term of VA benefits may be certified while waiting for transcript evaluation, however no subsequent terms will be certified for VA Benefits until Transfer Credit Evaluation is complete. All credits will be evaluated and transferred according to the policies stated in this catalog.

SCHOLARSHIPS
www.pcc.edu/scholarships

AGENCY OR COMPANY SPONSORSHIP
www.pcc.edu/resources/tuition-fees/ payment-info/tpbilling.html

Many employers and social service agencies sponsor students to attend PCC. Third party billing arrangements may already be in place with your financial sponsor. Arrangements must be finalized before the start of term and your billing authorization must be received by the payment due date.

SENIOR OPTION
If you are an Oregon resident who is 62 or older, you may be eligible for free or discounted tuition rates with PCC’s Senior Options. For complete details, please visit www.pcc.edu/resources/senior.

PAYMENT PLAN OPTIONS
For available payment plan options visit www.pcc.edu/payplan.

STEP 3–TAKE THE PLACEMENT TEST
www.pcc.edu/testing

All students attending college for the first time who plan to earn a certificate, associate degree, or transfer to another college must complete placement testing before registering for class. Testing is free. If you have prior college credits, see an advisor first for course placement.
GETTING STARTED

COLLEGE PLACEMENT
COMPASS, a basic skills placement test, is used to determine the appropriate classes for students in English and math. If you are enrolling for a certificate, degree, or diploma, placement testing is required. For specific testing hours and locations please visit our website. Preparing for and taking the placement test is a very important part of beginning your college career. Your scores determine which classes you’ll be able to take.

For more information on standard prerequisites, please visit www.pcc.edu/registration/prereq.

STEP 4–ATTEND A NEW STUDENT ORIENTATION
www.pcc.edu/orientation
The orientation will give you tips about making the most of your college experience. Orientation is required for all first-time college students, and is optional for those with prior college credits. You can attend an in-person orientation or complete it online.

STEP 5–MEET WITH AN ADVISOR
www.pcc.edu/advising
An advisor can help you plan a course of study to achieve your goals at PCC. You can meet with an advisor in person at orientation. If you have credits from other colleges, bring copies of your grades or unofficial transcripts to your advising session.

STEP 6–REGISTER FOR CLASSES
www.pcc.edu/registration
Once you have met with an advisor to develop your schedule, you are ready to register for classes.

The college offers several registration service options. Students are encouraged to use the website https://my.pcc.edu. Other options include fax, in-person, and mail-in processes. Specific registration information and procedures are available online at www.pcc.edu/registration. The schedule of classes can always be found on the PCC website. Students are not allowed to attend classes unless they are registered. Students in good academic standing are allowed to register for a maximum of 19 credits per term. Students wishing to enroll in more than 19 credits per term must receive permission from an academic advisor or department chair. At their discretion, an excess of 19 credits may be allowed. Advisors and department chairs will take into consideration a student's academic history, current GPA, work/home/school balance, and the rigors of the program or classes in which they are enrolled.

MYPCC ACCOUNT
A MyPCC account is automatically set up for all PCC students. This account provides online access to records and information a student will need when attending PCC. MyPCC allows you to register online, check your class schedule or the status of your financial aid, as well as view and pay your account balance, and more. MyPCC is an official form of communication and the college will use it to send important announcements and information. It is your responsibility as a student to regularly access MyPCC and read your announcements, as well as review your account records for accuracy.

REGISTRATION TIPS
Class choices available to you may include all campuses and centers of PCC. Check to be sure you have selected the correct class at the right location. You are personally responsible for dropping or withdrawing any class for which you are no longer wish to be registered. Even if you do not attend class, you are responsible for dropping or withdrawing. If you fail to drop within the refund period, you will be responsible for the charges. Check class information carefully, and take care of any mistakes as soon as possible. If you fail to withdraw within the withdrawal period, you will receive a grade for the course.

STEP 7–MANAGE YOUR REGISTRATION

PAY CLOSE ATTENTION TO DROP AND WITHDRAWAL DEADLINES
Drop deadlines can be found at www.pcc.edu/reg/drop.

What’s the difference between dropping and withdrawing from classes?

Drop
You will not be charged
You will not have a mark on your transcript

Withdraw
You will be charged
You will have a W on your transcript

For more information see www.pcc.edu/reg/drop

LATE REGISTRATION
Written approval of the instructor is required to add a class once it has started. The form must be submitted in person to the Registration Office within one week of approval. After that date, your enrollment cannot be guaranteed. A late registration fee may be charged if you enroll after the class begins. Late registration cannot occur after the term is complete.

CANCELED CLASSES
The college reserves the right to cancel a class that does not meet the minimum enrollment established by the college. Charges for canceled classes will be automatically reversed.

ADDING OR DROPPING A CLASS
Written instructor approval is required to add a class after the first class session. Approval forms are available at any Registration Office or online.

The deadline to drop and have charges removed varies by class length and type. The drop deadline for credit classes is located on-line and on the detail schedule in MyPCC.
WITTING FROM COLLEGE
You may formally withdraw from class by filing a form with the campus Registration Office or via my.pcc.edu. If you have applied for financial aid or Veterans’ benefits, you must also notify the appropriate office of your intention to withdraw.

Students who stop attending without formally withdrawing will receive the grades assigned by instructors and will be responsible for payment of tuition and fees.

CONTINUING EDUCATION CLASSES
Course numbers beginning with “CEU” are classes that award Continuing Education Units (CEUs) rather than college credits. CEUs are not equivalent to credits and therefore may not be used toward PCC certificates or degrees. Some programs offering CEU classes offer recertification or CEU certificates. One CEU is awarded for each 10 hours or their equivalent. PCC transcript records are available for CEU hours.

Tuition for CEU courses is charged regardless of the number of credits for which the student enrolls. CEU classes do not meet the federal requirements for financial aid or most Veterans’ benefits.

STEP 8–ARRANGE TRANSPORTATION
www.pcc.edu/parking
On-Campus Parking: Vehicles parked on any PCC campus and roadway between 7 am and 10 pm Monday through Friday must display a current PCC parking permit. PCC also requires visitors to display a parking permit. For a current fee schedule, visit the website.

Shuttle Services: Go to www.pcc.edu/shuttle to view the shuttle schedule for transportation between campuses.

Tri-Met Student Select Passes: A limited number of subsidized full-term passes are available to students enrolled in a minimum of 3 credits. Passes are available through the campus Business Office. Students must have a valid PCC picture ID and provide proof of enrollment. Student Select bus passes are sold on a first-come first-served basis only. Passes are non-refundable and non-transferable.

STEP 9–PAY YOUR BILL
www.pcc.edu/tuition

STUDENT FINANCIAL RESPONSIBILITIES
You are expected to attend all classes in which you are enrolled. If you do not attend or stop attending classes and fail to personally drop by the drop deadline you will be responsible for all tuition and fees. You are responsible to pay all charges on your account by the payment due date even if you do not receive a bill, or your account is being paid by another party. Unless you pay immediately at the time of registration, you are entering into a student loan with the college, which is non-dischargeable under USC § 523 (a) of the U.S. Bankruptcy code. This agreement shall be governed and construed in accordance with the laws of the State of Oregon. Any suit for enforcement shall be filed in the Circuit Court of Multnomah County, Oregon. If you are under 18 years of age, you are liable for any charges incurred in accordance with ORS 348.105. If your account is referred for collection you agree to pay all reasonable collection and attorney fees, including those incurred at trial and on appeal.

All term charges must be paid in full before you will be allowed to register for the next term. You are responsible for keeping PCC informed of any address or telephone changes.

BILLING INFORMATION
If you register using MyPCC you will be expected to access your schedule and bill online. If you register using other methods, a bill will be mailed to you prior to the beginning of the term. You are expected to pay on time even if you do not receive a bill.

LATE PAYMENT
One or more of the following measures will be taken if your payment is late:

• Deletion of your course registration.
• Late fee for up to 10% of your unpaid tuition and fees.
• Financial hold restricting access to future registrations and transcripts.
• Collection of your unpaid balance by an outside agency. Accounts referred for collection are subject to collection costs and attorney fees.

REMOVING TUITION CHARGES
To avoid being charged, you must drop your classes by the published deadline using MyPCC or by submitting an Add/Drop form at the Registration Office. You must confirm the drop was successfully completed; otherwise you may be charged all applicable tuition and fees and may receive a grade for the course. However, 100 percent of the charges associated with a class will be removed if the official drop was received by the deadline published online and in the schedule of classes. No charges will be removed if the drop was received after the deadline for the class.

TUITION FORGIVENESS
If you were unable to complete course(s) due to circumstances beyond your ability to control, you may formally petition to receive a tuition credit. Petitions are reviewed by the college appeal committee after all petition requirements have been met. If approved, a tuition credit will be issued to help offset the cost of future enrollment. For more information please visit www.pcc.edu/tuition/petition.

REFUNDS
Refunds resulting from an overpayment or reversal of paid charges are first applied to other outstanding charges on your account, even if payment is not yet due. Remaining credit balances in excess of $15 will be refunded within 30 days. Credit card refunds will be credited back to the card originally used in payment. Refunds resulting from payments made by third party sponsors, financial aid or scholarships will be returned to the originator.

TAX CREDITS FOR EDUCATION (1098-T)
The American Opportunity (Hope Credit extended) and the Lifetime Learning Credit are education credits that can help offset the costs of education. To determine your eligibility please consult your tax advisor. PCC staff cannot help with tax related questions.
If you plan to claim an educational tax credit, your social security number (SSN) is required for tax reporting. To update your SSN, go to the My Records link on MyPCC. A form 1098-T is available January 31 each year to students who were enrolled in credit courses. PCC delivers all 1098-T forms electronically via MyPCC. Students may access their forms online by selecting the desired tax year. Students who wish to receive a 1098-T form by mail must contact the PCC Business Office prior to the end of the tax year.

STEP 10–GRADUATION

All students graduating from Portland Community College must complete the graduation requirements for the program in which they are pursuing. Details about the graduation process can be found at www.pcc.edu/graduate.

A formal commencement ceremony is held at the end of spring term. All students graduating in the current academic year (fall, winter, spring and summer) are eligible to participate if they have RSVP’d by the deadline. Information regarding cap and gown purchases is emailed to eligible students and is also available at www.pcc.edu/graduate.

Graduating students will receive diplomas by mail six to ten weeks after the degree or certificate has been awarded. The diploma will be mailed to the address of record for the student. Please contact the Student Records Office if there is an address change. Students must clear all debts to the college before their degree or certificate will be awarded.

TRANSCRIPTS

Official transcripts include the college seal and the signature of the Registrar. To be considered official, most colleges, universities, and employers require transcripts to be submitted in the original sealed envelope.

There are several ways to obtain an official transcript of classes completed at PCC. Electronic requests for transcripts can be completed on MyPCC. This is the fastest way to request a transcript. Official transcript requests can also be faxed to any Enrollment Services Office by downloading the request form and faxing it. Completed request forms can also be submitted to the any Enrollment Services Office. Mailed requests should be sent to:

Enrollment Services
Portland Community College
P.O. Box 19000
Portland, Oregon 97280

CALENDAR OF INSTRUCTION

SUMMER 2012
Term Begins: June 25
Final Exams: September 3-9
End of Term: September 9

FALL 2012
Term Begins: September 24
Final Exams: December 10-16
End of Term: December 16

WINTER 2013
Term Begins: January 7
Final Exams: March 18-24
End of Term: March 24

SPRING 2013
Term Begins: April 1
Final Exams: June 10-16
Graduation: June 14
End of Term: June 16

SUMMER 2013
Term Begins: June 24
Final Exams: September 2-8
End of Term: September 8

To view a calendar of instruction please visit www.pcc.edu/academic-calendar.

*Summer finals schedules vary. Consult instructor.
** 11 week classes. PCC operates on the quarter system.
For registration calendar details see the appropriate term’s schedule of classes at www.pcc.edu/schedule.

ATHLETICS

www.pcc.edu/athletics

The college athletic program includes both men’s and women’s basketball. The programs are part of the Northwest Athletic Association of Community Colleges representing the community colleges of Oregon and Washington. The teams are based at the Cascade campus. All home games will be played at Cascade. Official practice begins in October.

Players may be enrolled at any PCC campus and must carry a minimum of 12 credits and meet all other eligibility requirements set by the NWAACC.

BOOKSTORES

www.pcc.edu/bookstore

Full-time bookstores are located at the Sylvania, Rock Creek and Cascade campuses, while a part-time bookstore serves Southeast Center.

Hours vary at the beginning of the term, so check the website, schedule of classes or call for hours at 971-722-4704.

Tri-Met bus tickets and bus passes may be purchased at any bookstore. Select student passes are available at the Business Office.

The bookstore accepts VISA and MasterCard. Checks are accepted for the amount of purchase only, and checks must be drawn on a local bank and imprinted with current information. When paying by check, you must show one of the following: two pieces of identification: your current PCC ID card, check guarantee card, Oregon Drivers License or Oregon I.D. There is a service charge for all returned checks.
Child care services offer resources and referrals which help students in a variety of ways. Limited on-campus child care is available. Child care is often a major concern to students, and PCC can help. www.pcc.edu/resources/child-care

**BUSINESS OFFICE**

**www.pcc.edu/resources/business**

PCC Business Offices accept payments for tuition, PE and library fines, and miscellaneous charges. Checks, MasterCard, and VISA are accepted.

**CAREER RESOURCE CENTERS**

**www.pcc.edu/careers**

The Career Resource Centers provide services to students and the community. Resource materials provide current career and job market information to those making initial career decisions or looking for a career change. Computer-assisted programs in career assessment and exploration, personality assessment and résumé preparation are available. The centers also offer Internet access with web pages and bookmarks on career exploration and college choices. College catalogs, local career trend newspapers and videos are available to help with the college, career and job research process.

**CHILD CARE**

**www.pcc.edu/resources/child-care**

Child care is often a major concern to students, and PCC can help in a variety of ways. Limited on-campus child care is available. Child care services offer resources and referrals which help students find and evaluate the quality of care, arrange financial assistance if specific qualifications are met, and provide information about selecting care. Child care resource and referral provides information for both on-campus and off campus child care. Referrals include child care centers, family child care providers, school-age programs, Head Starts, and pre-schools located within the Tri-County area.

**SYLVANIA CHILD DEVELOPMENT CENTER**

The Child Development Center on the Sylvania Campus is operated by the Early Education and Family Studies Department. The center has a dual focus: to provide a laboratory educational experience for students in the Early Education and Family Studies Program, and child care in a licensed and accredited program for the children of PCC students and staff. Available programs include a morning program for infants 3-14 months and half-day sessions for 14-36 month old children. Half day and full day programs are available for ages 3-6 years old. The evening program is available to children 14 months to 8 years old. For questions and application call 971-722-4424. The center is located in the HT building, room 220.

**ROCK CREEK CHILD CARE CENTER**

The Rock Creek Child Care Center offers parents a variety of child care options. Daytime care is available for half-day and full day, children must be between the ages of 3 and 5 and completely toilet trained. Priority is given to adult students/caregivers who are Pell Grant eligible and enrolled full time at PCC Rock Creek. For questions and application contact 971-722-7511. Evening child care is available Monday through Thursday for children ages 3-12. Activities include arts and crafts, playtime, reading and quiet time. The center is located in building 3, room 101.

**COMPUTER RESOURCE CENTERS**

**www.pcc.edu/crc**

The most comprehensive computer lab facilities open to all currently registered PCC students are the Computer Resource Centers (CRC) located on the Cascade, Rock Creek, and Sylvania campuses and the Southeast Center. While all currently enrolled PCC students are welcome, an orientation is required before using the centers.

The CRCs offer Macintosh, Windows and UNIX computers. Software applications include internet access, word processing, desktop publishing, spreadsheets, databases, web page authoring, presentations, and programming languages.

If you need help while using a CRC, lab assistants are available to assist you.

**COOPERATIVE EDUCATION**

**www.pcc.edu/careers/coop**

Cooperative Education is a partnership between student, college and employers that gives students college credit while they gain valuable on-the-job experience. Cooperative Education (sometimes called Cooperative, internship, or practicum) helps students practice and build skills, make informed career decisions, gain a job-market advantage, and bona fide work experience to be included on a resume. Cooperative Education Specialists help students identify eligible work sites, apply for positions, and support students as they complete their work experience.

**COUNSELING SERVICES**

**www.pcc.edu/counseling**

Portland Community College provides a comprehensive program of counseling services designed to assist students in developing academic and personal potential. Counselors support students in some of the following ways: career development and exploration, study skills, relationships, depression, anxiety, stress, crisis situations, and balancing personal and academic responsibilities. All services are free and open to currently registered students. Some limited career services are available to non-registered students. Professional counselors are available at Cascade, Rock Creek, and Sylvania campuses and the Southeast Center.

**DISABILITY SERVICES**

**www.pcc.edu/disability**

Disability Services provides a wide range of in-class and campus access services to students who experience documented disabilities. These services are designed to promote student independence and equal access to classroom and college-related activi-
ties for those students demonstrating an ability to benefit from the college experience. Services include sign language interpreters, transcription services, note taking options, in-class aides, test accommodation services, alternate media formats for printed materials, and campus-based adaptive equipment and training.

Students wishing to request services from Disability Services must meet with a Disability Services counselor (available at Cascade, Rock Creek, Southeast Center, and Sylvania) for an intake appointment. Provide 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 Disability Services prior to receiving services. Request for accommodations must be submitted through a Disabilities Services counselor each term.

Follow the time lines and procedures for receiving each service as outlined in Disability Services Student Handbook available at campus offices and online.

Vocational Training: Although the college does not provide special education or specialized (individualized) instruction, individualized vocational training is available for qualified students with disabilities through the Culinary Assistant Training Program (see Programs and Disciplines in this catalog).

Adaptive Physical Education: Specialized courses instructed and supervised by a qualified instructor are available through the college Physical Education Departments.

Accessible Parking: Disabled parking is available at each campus for drivers with valid permits obtained through the Oregon State Department of Motor Vehicles. Drivers must still have valid PCC parking permits to use these areas. Students needing temporary disabled parking (two weeks or less) may make arrangements through Disability Services. A letter from a physician supporting the need for this temporary service is required.

Accessible Pay Phones: Pay phones equipped with TTY (for hearing/speech impairments) are available at most campus locations. A list of TTY locations is available in the Disability Services Student Handbook available at campus offices and online.

FITNESS AND RECREATION

www.pcc.edu/programs/pe

All campuses provide recreational opportunities in their gymnasiums, weight rooms, and walking/jogging routes. For specific procedures, contact the Physical Education Department on each campus.

FOOD SERVICES

www.pcc.edu/resources/dining

The college offers weekday food services at Sylvania, Cascade and Rock Creek Campuses and Southeast Center. Saturday service is available at Rock Creek, Southeast and Sylvania. All food services may not be available between terms.

GALLERIES

www.pcc.edu/about/galleries

There are art galleries located at Cascade, Rock Creek and Sylvania campuses. Shows are continually changing, featuring guest artists, students and faculty.

GRANT PROGRAMS

COLLEGE ASSISTANCE MIGRANT PROGRAM – CAMP

www.pcc.edu/camp

The College Assistance Migrant Program, referred to as CAMP, is a federally-funded program designed to support documented students from migrant and seasonal farm worker backgrounds during their first year in college. The program provides students with both financial assistance and support services, with the goal of preparing them to continue their education at a four-year college or university. Students who get accepted into the program receive services such as: tuition assistance, CAMP courses, transportation assistance, tutoring and mentoring, academic advising, personal and career advising, book assistance, health resources, and monthly stipends. For more information please contact our CAMP recruiter at 971-722-7485.

ROOTS

www.pcc.edu/roots

The ROOTS Program is a federally-funded TRiO program dedicated to helping students achieve their educational goals. The program helps low income, first generation students, and students with disabilities stay in school, transfer to other colleges or universities, and/or graduate from PCC.

The program provides individualized academic advising, personal financial aid counseling, degree and transfer planning, free college success classes, scholarship application support, and visits to four-year colleges at no cost to the student. The PCC ROOTS program is available at the Cascade and Sylvania Campuses. Apply online or visit the ROOTS office on the Sylvania Campus CC 225, or Cascade Campus SSB 301.

EDUCATIONAL TALENT SEARCH

www.pcc.edu/ets

Educational Talent Search (ETS) is an outreach program designed to help students who have the potential to be successful in college to aspire, prepare for, and enroll in the college of their choice. ETS students generally come from families in which neither parent had the opportunity to attend college or receive a college degree. The goal of ETS is to increase the number of youth from disadvantaged backgrounds who complete high school and enroll in college. Educational Talent Search also serves students who dropped out of high school by encouraging them to re-enter the educational system and complete their education. ETS is available at the Rock Creek Campus. For more information contact: 971-722-7572.

HEALTH SERVICES AND INSURANCE

Portland Community College provides no health services on its campuses. Emergency medical treatment while on campus is available by calling 971-722-4444.

PCC students of any age are not insured by the college for health and accident. However, students who are registered for nine or more credits may purchase student health insurance on a voluntary basis. The application form and brochure detailing the coverage and its cost are available on all campuses and Southeast center in the information center.
HOUSING
Portland Community College does not provide housing for students attending the college.

ILLUMINATION PROJECT
www.pcc.edu/resources/illumination
The Illumination Project (IP) is Portland Community College's innovative student leadership and education program designed to foster a climate of equality, compassion, justice, and respect for all people in the PCC academic community and the community at large.

The Illumination Project uses interactive social justice theater as a venue for student educators and audience members to join together to rehearse ways of solving problems. Interactive theater, with its capacity to engage diverse learning styles and members of a community, is an ideal way to challenge racism, sexism, heterosexism and other forms of oppression.

LIBRARY AND MEDIA CENTERS
www.pcc.edu/library
Portland Community College libraries provide many services for students, faculty, and the community. The college has libraries at the Cascade, Rock Creek and Sylvania campuses, as well as a limited-service library at Southeast Center. The library's website provides detailed information about library hours and services.

Faculty librarians are available to help students and instructors with research, homework, and information needs. The library provides reference services in person, over the phone, and via the library website. Faculty bring classes into the library for customized instruction by faculty librarians. Librarians also visit classrooms and teach a class that helps students with writing assignments.

The library's diverse collection includes electronic and print books, magazines, CDs, DVDs, streaming video, and more. The library can provide materials from other libraries through its membership in Summit, a consortium of regional academic libraries, and interlibrary loan. Students can also check out digital cameras and computers from the library.

PCC libraries have many quiet study spaces and rooms for group work. Students may bring their own laptop or use a library computer. All libraries have wireless Internet access. Visit a library in person or on the web to find out more.

MULTICULTURAL CENTERS
www.pcc.edu/multicultural
The Multicultural Centers located at Sylvania and Rock Creek supports the efforts of students of color in achieving academic and personal success. The centers are central places that nurture learning and the achievement of personal and educational goals through cultural enrichment, peer tutoring, advising, and mentorship. They offer one-on-one tutoring, information and referral services, sponsor educational and cultural workshops, events and activities. The centers are dedicated to developing multicultural student leaders and raising awareness of issues related to race and culture on campus. They are open Monday through Friday with hours varying each term based on student availability. Faculty, staff and students are encouraged to use the center for peer tutoring, study groups, and cultural resources.

OREGON LEADERSHIP INSTITUTE
www.pcc.edu/oli
The Oregon Leadership Institute (OLI) at the Rock Creek Campus is a cooperative program between PCC and the Oregon Council for Hispanic Advancement (OCHA). OLI was created in 1986 to help Latino High School students develop leadership skills, learn about opportunities for post-secondary education, and explore career options. The tuition-free, three credit class, offered fall, winter, and spring terms consists of nine full-day seminars, held one Saturday a month from October to June. The PCC-OLI program recruits high school Latino students who are sophomores, juniors, and seniors attending schools in Washington County. The students must be willing to make a commitment to attend all nine Saturday sessions.

OFFICE OF INTERNATIONAL EDUCATION (OIE)
www.pcc.edu/international
The Office of International Education (OIE) offers academic and immigration advising and a comprehensive student activities program to introduce students to Oregon and American culture.

STUDENT EXCHANGE
www.pcc.edu/studyabroad
Portland Community College in cooperation with the American Institute for Foreign Studies and Oregon International Consortium offers study abroad opportunities. Courses offered in these programs are in the areas of arts and letters, and social sciences. In addition, PCC has an academic exchange program. To be considered for the program, students must be currently attending PCC.

PUBLIC SAFETY
www.pcc.edu/about/public-safety
The Department of Public Safety promotes a safe and secure campus community through the delivery of quality public safety, fire, medical and public assistance services. The department provides personal and facility security, crime prevention services, public safety communication, a disaster preparedness program, emergency medical assistance, response to calls for service, assistance with parking and traffic management, and preliminary investigative services. Services the officers provide include: battery jumps, vehicle lock outs, room unlocks and escorts to parking lots or buildings upon request.

STUDENT EMPLOYMENT
www.pcc.edu/resources/careers/students-grads
Student and Graduate Employment Services offers job referral services for Portland Community College students and graduates at all campuses. It is designed to provide equal opportunity to job leads at any time during college and upon graduation. Services include employer contact to develop job openings, campus recruiting for employers, direct assistance to students through workshops and seminars, and personal help for resume writing, interviewing techniques, and job search development.

If you are currently enrolled and need a job to help pay for school, check the part-time job listings posted at each college campus and online. All campuses receive identical job listings daily.
Employment Specialists are available during scheduled hours at each campus. They will help you develop a competitive resume and assist you in finding a full-time position.

Portland Community College provides equal opportunity in education and employment. The college is committed to a policy of non-discrimination based on sex, age, handicap, color, religion, or national origin. Equal employment opportunity guidelines are followed and students are referred on a non-discriminatory basis.

STUDENT GOVERNMENT (ASPCC)
www.pcc.edu/aspcc

The Associated Students of Portland Community College (ASPCC) at Cascade, Rock Creek, Southeast, and Sylvania invite students to become involved with activities, research, committees, clubs, and organizations. Many student leadership positions are paid including secretary, activities assistant, and sign maker. Other important leadership positions are filled by volunteers desiring to enhance their college experience and build their resumes. This includes opportunities to be a member of the Student Leadership team providing representation in college decision-making. Many students find leadership positions in clubs and committees organizing social, cultural, and recreational activities. Volunteers find purpose and are encouraged to be active in one of the variety of clubs and committees associated with ASPCC. ASPCC provides housing referrals, car pool opportunities, and book buyback exchanges. Information is available at the ASPCC office located on each campus.

INTRAMURALS

The Intramural Office organizes a variety of events, activities, and tournaments open to all PCC students enrolled in at least one credit, and to all PCC faculty and staff during the academic year. To participate present a valid PCC ID card. Activities are offered at little or no cost to students and may include racquetball, golf, soccer, volleyball, basketball, pool, table tennis, bowling, and video game tournaments. Contact your campus ASPCC for more information.

THEATRE
www.pcc.edu/theatre

The Theatre Arts program offers students a wide range of theatre classes, a chance to perform and to assist in the production of three main stage productions each year, and an opportunity to submit their own work for the Spring Short Play Festival. The plays are produced and performed at the Rock Creek and Sylvania campuses.

TUTORING
www.pcc.edu/tutoring

Free assistance for PCC students is available day and night hours at Learning Centers located at each campus. On-line tutoring is available as an alternative to the campus based help. At the tutoring website students will find self-help materials, videos, computer-aided instruction, word processing and individualized credit options provide alternative learning opportunities in math, English and other courses.

WOMEN’S RESOURCE CENTERS
www.pcc.edu/resources/women

CASCADE CAMPUS

The Women's Resource Center on the Cascade Campus is dedicated to providing a supportive, encouraging and safe environment for all PCC student and actively seek the end of oppression based on gender, race, religion, ethnicity, sexual orientation, age, and physical and mental abilities through all the centers programs and services. The Center provides services that support the academic achievement of women, improve the retention of women students at the college and provide ties to community and campus resources. The Women's Leadership Program provides training in leadership skills, support in planning student-initiated events and programs, and leadership mentoring.

Project Independence is a 7 credit, tuition free program designed for single parents, returning women, and students in transition planning to earn a college certificate or degree. The program offers on-going support as well as one term of a learning community in which students take the following courses together: CG 100C, CG 140B, CG 144, CG 146, MTH 15, and PE 182H.

ROCK CREEK CAMPUS

The Women's Resource Center on the Rock Creek campus offers information and support services to students for campus and community services. Although the emphasis is on meeting the special needs of women and single parents, the center is open to all students. Services include child-care and scholarship information, as well as a lending library. The center sponsors workshops on financial aid planning, scholarship search, women's health and safety issues, and other family and school related issues. Please call for more information.

New Directions and Tranciones Oeste, are tuition free programs for women in transition. Transiciones Oeste is taught in Spanish. Both programs are designed to assist women to become self sufficient. Career planning, personal development, and job search skills are taught as well as tools for college success. Goals of the programs are to support students in making a career choice and develop life-skills that lead to financial independence.

SOUTHEAST CENTER

The Southeast Center is currently developing a Women's Resource Center. A listing of available resources as well as a posting of pertinent events is located next to the ASPCC office in Tabor Hall. All students are encouraged to stop by and access available information. Additional referral information for campus and community resources is available through the Counseling Office in Tabor 152.

Life Tracks is a tuition free program for women and single parent in transition. This cohort class emphasizes career development and values clarification. The goal is to assist students as they transition into or return to college and to encourage students to continue in their training and education to reach their personal goal.

SYLVANIA CAMPUS

The Women's Resource Center on the Sylvania Campus supports the efforts of women as they strive to achieve academic, personal, and economic success. It offers personalized assistance entering college, advocacy, support, and friendship in a caring environment and is a bridge for women returning to school after an absence, as well as for those first entering college. The center
assists students with information and referral services, scholarship information, sponsors educational workshops and symposiums. All students are encouraged to drop in for information, check the activities and events board, and use the free resource library.

The Sylvania Women’s Resource Center sponsors three important programs; the Transitions Program, the Illumination Project, and Women’s Leadership Program.

THE TRANSITIONS PROGRAM
The Transitions Program is a free first term college success program for single parents, displaced homemakers, and other students in transition. The Transitions Program is a strength-based supportive learning community dedicated to easing the transitions to college, career, and life changing possibilities. Our purpose at the Transitions Program is to help remove any obstacles that could get in the way of a students progress to college success. The program is geared to the needs of students with families, jobs, and other responsibilities who wish to prepare for the future. This program empowers students to think assertively and to become independent in their thoughts and actions.

WOMEN’S LEADERSHIP PROGRAM
The Sylvania Women’s Resource Center is built on a feminist philosophy of shared leadership and decision-making which promotes the empowerment and skill development of all women. The WRC sponsors a Women’s Leadership Training program for the Student Advocates who work in the Center. Student Advocates develop skills in advocacy, problem solving, crisis intervention, resource research, public speaking, community organizing, coalition building, program design and implementation. If you are interested in a position in the WRC come by and find out more about applying to the Women’s Leadership Program.

DEGREE, CERTIFICATE, AND COURSE OVERVIEW
Portland Community College operates on the quarter system. The PCC Catalog is published and dated with each academic year, which begins fall term and ends with the next summer term. To earn an associate degree or a certificate, students must meet the requirements in the catalog that is current when they earn their first credit(s) at PCC, unless they choose to meet the requirements of a later catalog. However, students who do not earn at least one PCC credit each academic year lose the right to meet the requirements of their original catalog. They must then meet requirements of the current catalog at the time they resume work on their degree or certificate at PCC, or a later catalog. If a student has not been consecutively enrolled (earning at least one credit per academic year) they must meet the requirements of the most current catalog. Students at Portland Community College will receive degrees and/or certificates based upon an institutional awarding standard. The college will grant degrees and/or certificates upon completion of requirements for the student’s recorded program of study. Opting out of an institutional award requires completing the appropriate request through the graduation office. Multiple credentials may be institutionally awarded within a student’s program of study. For details regarding this standard, see the graduation office website.

An edition of the catalog is valid for six academic years. For example, a catalog that takes effect fall term 2007 is only valid through summer term 2013. However, some programs may impose shorter time limits on accepting credits for degree or certificate requirements. Occasionally the college may change courses and course numbers within a program. Students should regularly consult an advisor in their major department about their course of study.

While every effort is made to ensure the accuracy of the information in this catalog, Portland Community College has the right to make changes at any time without prior notice. This catalog is not a contract between Portland Community College and current or prospective students.

PORTLAND COMMUNITY COLLEGE CONFFERS FIVE ASSOCIATE DEGREES:

- Associate of Arts Oregon Transfer (AAOT),
- Associate of Science (AS),
- Associate of Applied Science (AAS),
- Associate of General Studies (AGS),
- Associate of Science Oregon Transfer in Business (ASOT-BUS);

In addition, PCC offers numerous certificates in career technical education programs.

COMPUTER PROFICIENCY: A STATEMENT TO STUDENTS

In order to succeed in college and in the community, students need to be familiar with and capable of using computers and computer software. Both upper division college work and the requirements of the workplace demand such skills. Many PCC faculty will require students to access class materials on the Internet and use a word processor, e-mail and databases as part of regular course activities.

Students need to determine which computer skills are appropriate to their areas of study and take positive steps to acquire and use them early. In order to facilitate appropriate student access to computers and computer software, each comprehensive campus at the college provides classrooms, labs, course work, and library access where students can learn about and use these tools.

Students should contact their instructors, the campus library, the campus Office of Student Development, the Associated Students of Portland Community College, or the campus Advising and Counseling Offices to find out what computer resources are available and when they can be accessed. Advisors and faculty can assist students in choosing appropriate courses to help them achieve computer proficiency.

COURSES

PCC offers courses to support the students’ learning goals at several campuses and center locations in the college’s district. These are done through a variety of programs, such as Cooperative Education and Service Learning. In addition, PCC supports additional access points through courses taught by Distance Learning. Distance Learning includes, but is not limited to, Web courses, Telecourses, ITV (Interactive Television Classes), and Hybrid courses (traditional classroom with significant web component). Web, TV and ITV courses are identified as such and also listed in the Class Schedule (printed or online at www.pcc.edu).
Credit courses that support PCC’s degrees and certificates are listed in the Course Description section of the catalog. We strongly urge students to meet with PCC advisors to make an academic plan. In selecting course offerings to support their educational goals, students should keep in mind the following:

**Course Prerequisites:** Most Lower Division Collegiate courses have a standard prerequisite
- **Reading:** Successful completion (C or better) of RD 115, or equivalent test score, or successful completion (C or better) of WR 121, and
- **Writing:** Successful completion (C or better) of WR 115, or placement into WR 121, and
- **Math:** Successful completion (C or better) of MTH 20, or placement into Math 60

In a standard prerequisite course, a D, F or NP will not satisfy the requirement.

Some courses may have higher requirements in these areas and/or additional prerequisites as appropriate. See individual course prerequisites. Instructors may waive prerequisites on a case-by-case basis.

**Three to Four Credit Conversion:** Some lower division collegiate courses (LDC) have changed from three to four credits at PCC. For degrees and certificates requiring specific LDC courses, the three credit version of the same course is generally accepted. PCC degree and certificate minimum credit requirements must be met.

**Experimental Courses:** Experimental courses are courses numbered 99, 199 and 299. These courses may be offered twice in a 15 month period. After that time, they must either be converted to a regularly numbered course or inactivated. While experimental courses may count for graduation at PCC, they may not be acceptable for transfer to other institutions.

**Non-credit courses:** PCC offers a large number and variety of non-credit courses for personal and career advancement as well as continuing education for professionals in several areas. See [www.pcc.edu/communityed](http://www.pcc.edu/communityed) for a list of courses and registration information. Non-credit courses do not apply to any degrees or certificates at PCC.

**DEGREES AND CERTIFICATES**
A complete listing of Portland Community College’s degree and certificate programs and transfer disciplines may be found in the Programs and Disciplines section of the catalog.

**CERTIFICATES**
Some career technical departments offer certificates ranging from 12-108 credits to students who complete the course of study with a minimum 2.0 grade point average. Specific courses required for each certificate program, including any General Education requirements, are listed under their appropriate programs in the Programs and Disciplines section of the catalog.

Credit courses, numbered below 100 cannot be used to fulfill the credit minimum requirements for certificates.

Please note the following requirements:

**TWO-YEAR CERTIFICATE REQUIREMENTS**
1. At least 24 credits must be earned at PCC, 18 of which must apply to the certificate requirements. The final nine credits that apply to the certificate must be earned at PCC.
2. A maximum of 24 credits of “P” (Pass) grades will apply to any two year certificate. Specific two year certificates that deviate from this maximum will state their pass/no pass maximum in the requirements for the specific two year certificate.
3. A maximum of 12 credits of Cooperative Education courses may be applied to any two year certificate. Specific two year certificates that deviate from this maximum will state their Cooperative Education maximum up to 24 credits (12 per year) in the requirements for the specific two year certificate.
4. Only nine credits of 199 and 299 experimental courses apply.

**ONE-YEAR CERTIFICATE REQUIREMENTS**
1. At least 12 credits must be earned at PCC, nine of which must apply to the certificate requirements. The final nine credits that apply to the certificate must be earned at PCC.
2. A maximum of 12 credits of “P” (Pass) grades will apply to any one year certificate. Specific one year certificates that deviate from this maximum will state their Pass/No Pass maximum in the requirements for the specific one year certificate.
3. A maximum of 12 credits of Cooperative Education courses may be applied to any one year certificate.
4. Only nine credits of 199 and 299 experimental courses apply.

**LESS THAN ONE YEAR CERTIFICATE REQUIREMENTS**
1. At least 6 credits must be earned at PCC, all of which must apply to the certificate requirements. The final six credits that apply to the certificate must be earned at PCC.
2. A maximum of 8 credits of Pass/No Pass grades will apply to any less than one year certificate. Specific less than one year certificates that deviate from this maximum will state their Pass/No Pass maximum in the requirements for that specific certificate.
3. Only nine credits of 199 and 299 experimental courses apply.

**CAREER PATHWAY CERTIFICATES**
Career Pathway Certificates are short-term credentials (12-44 credits) which prepare individuals for entry-level employment within an occupational area. Career Pathway Certificates may be the first certificate a student earns while pursuing a certificate of greater length or an Associate of Applied Science (AAS) degree. Information about Career Pathways in specific areas of study can be found in the Programs and Disciplines section of the catalog under individual career technical programs. Based upon credits, career pathway certificates need to meet less than one year requirements.
EMPLOYMENT SKILLS TRAINING

Some career technical departments offer the Employment Skills Training Certificate (EST). The EST is an individualized certificate ranging from 12–44 credits that prepares the student for a specific job. Students should contact the appropriate career technical department to find out whether the department offers the EST. A full description of the EST may be found in the Programs and Disciplines section of this catalog.

ASSOCIATE DEGREE COMPREHENSIVE REQUIREMENTS

Students earning an associate degree from Portland Community College must successfully complete the Associate Degree Comprehensive Requirements listed below along with additional requirements for specific associate degrees. In addition, each associate degree requires basic competencies in Writing and Math. Competency requirements vary by associate degree. Check the competency requirements for specific associate degrees.

COMPREHENSIVE REQUIREMENTS:

1. All candidates must earn a minimum of 90 credits which count toward an associate degree. Credit courses, numbered below 100, cannot be used to fulfill the 90 credit minimum requirement for any degrees.

2. Residency Requirement:
   - All candidates for a degree at Portland Community College must accumulate at least 30 quarter hours of satisfactory work at PCC to establish residency. Non-traditional credit, credit transferred from another institution or challenge credit cannot be used to establish the 30 quarter hour residency requirement.
   - Twenty-four of the credits earned at PCC must apply to the specific associate degree requirements the student is pursuing.

3. All candidates for a degree must have at least a 2.0 grade point average (C average).

4. Associate Degree Comprehensive Requirement limits are:
   - A maximum of 12 credits of Cooperative Education courses may be applied to any degree. Specific AAS degrees that deviate from this maximum will state the degree maximum up to 24 credits (12 per year) in the degree requirements for the specific AAS degree.
   - A maximum of 9 credits of 199 or 299 Experimental courses may be applied to the degree.
   - A maximum of 24 credits of English for Speakers of other Languages (ESOL) credit courses may be applied to the degree.
   - A maximum of 24 credits of “P” (Pass) grades will apply to any degree. Specific AAS degrees that deviate from this maximum will state the degree maximum in the degree requirements for the specific AAS degree.

ASSOCIATE OF APPLIED SCIENCE (AAS) DEGREE REQUIREMENTS

The Associate of Applied Science (AAS) degree is awarded to students in career technical programs who meet the requirements listed below. This degree may transfer to local colleges and universities. Contact the individual department or desired transfer institution for transfer information. Many career technical programs require more than 90 credits for an associate degree. See specific program requirements in the Programs and Disciplines section of the catalog.

The Associate of Applied Science Degree is awarded to students who meet the following requirements:

1. Associate Degree Comprehensive Requirements

2. Associate of Applied Science Requirements

   A. The final 16 credits that apply to the degree must include at least eight credits at PCC that apply to the specific program requirements, excluding courses used solely for the General Education requirements. Students may apply to the department chair for an exception to this requirement if they can demonstrate currency in the field.

   All candidates must earn 24 credits from PCC that apply to the specific program requirements excluding courses used solely for the General Education requirements. See specific program requirements in the Catalog.

   B. General Education Requirements: Students must earn a minimum of 16 credits of General Education taken from the General Education Distribution/Discipline Studies List. These credits must come from courses taken in the following categories:

   - Arts and Letters
   - Social Sciences
   - Mathematics, Science and Computer Studies

   The 16 credits must include at least one course with a minimum of three credits from each category of the General Education/Discipline Studies categories. No more than two courses may come from courses required by specific programs. Because of these restrictions, it is possible that a course is acceptable as General Education for some students while it is not acceptable for others. Students should consult an advisor or faculty member in an AAS program requirements, excluding courses used solely for the General Education requirements. General Education requirements may be waived for students who enroll at PCC with an AA, AAS, AGS, AS, BA, BS degree or higher from a regionally accredited United States institution. Program-specific General Education requirements for AAS degrees will not be waived.

   C. PCC Basic Competency Requirements for Writing and Math in AAS Degree:

   Writing: Competency in writing must be demonstrated by either:
   - Completing WR 121 with a C or better, or...
• Passing a lower division collegiate* writing course for which WR 121 is a prerequisite with a C or better

*See Course Descriptions in PCC Catalog for a complete list.

Students with AA, AAS, AGS, AS, BA, BS, degrees or higher from a U.S. regionally accredited institution will have the basic competency in writing (WR 121) waived. Other writing requirements specified by the program remain in effect.

Math: Competency in mathematics must be demonstrated by either:
• Completing MTH 65 or MTH 63 with a C or better, or
• Passing the PCC competency exam for MTH 65, or
• Passing a math class (minimum of 3 credits) with a C or better for which MTH 65 or higher level math skills are a prerequisite. Excludes MTH 93.

D. Program Requirements:

All AAS candidates must complete a program of approved course work in the major field. The Programs and Disciplines section of the catalog contains these course work requirements. No more than 3 credits in physical education (PE) may be applied to an AAS Degree unless specifically required by the program. Students enrolled in programs that are accredited or licensed must meet the requirements most recently approved by the accrediting agency or licensing authority.

ASSOCIATE OF GENERAL STUDIES (AGS) DEGREE REQUIREMENTS

The Associate of General Studies degree is designed for students wishing to acquire a broad education, rather than pursuing a specific college major or career technical program. Because of the flexibility of this degree, it may not fulfill requirements for transfer to a four-year institution.

The Associate of General Studies is awarded to students who meet the following requirements:

1. Associate Degree Comprehensive Requirements: refer to comprehensive requirements section.

2. Associate of General Studies Requirements:

A. General Education Requirement: Students must earn a minimum of 16 credits of General Education taken from the General Education Distribution/Discipline Studies List. These credits must come from courses taken in the following categories:

• Arts and Letters
• Social Sciences
• Mathematics, Science and Computer Studies

The 16 credits must include at least one course with a minimum of three credits from each category of the General Education/Discipline Studies categories. The General Education requirements for the AGS degree will be waived for students who enroll at PCC with an AA, AAS, AGS, AS, BA, BS degree or higher from a regionally accredited United States institution.

B. Basic Competency Requirements in writing and math for AGS Degree:

Writing: Competency in writing must be demonstrated by either:
• Completing WR 121 with a C or better, or
• Passing a lower division collegiate* writing course for which WR 121 is a prerequisite with a C or better

*See Course Descriptions in PCC Catalog for a complete list.

Students with AA, AAS, AGS, AS, BA, BS, degrees or higher from a U.S. regionally accredited institution will have the basic competency in writing (WR 121) waived. Other writing requirements specified by the program remain in effect.

Math: Competency in mathematics must be demonstrated by either:
• Completing MTH 65 or MTH 63 with a C or better, or
• Passing the PCC competency exam for MTH 65, or
• Passing a mathematics course (minimum of 3 credits) for which MTH 65 is a prerequisite with a C or better.

C. Elective Credit Requirements – All students must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective credits may apply from any course numbered 100 or higher (either lower division collegiate or career technical). Elective credit limitations are:

• Maximum of six credits (100 level and above) of physical education (PE) may apply
• Maximum of six credits of one credit MSD workshops may apply
• Maximum of 24 credits of occupational skills classes (OST) may apply

ASSOCIATE OF SCIENCE (AS) DEGREE REQUIREMENTS

The Associate of Science degree is designed for students planning to transfer credits to a baccalaureate degree program at four-year institutions of the Oregon University System. It allows more freedom in course selection than the Oregon Associate of Arts Transfer Degree, but does not guarantee that students will be accepted as having completed all lower division comprehensive and General Education requirements for a baccalaureate degree. In selecting course work, students should see advisors at PCC and the institution to which they will transfer about the requirements of their baccalaureate major.

The Associate of Science degree is awarded to students who meet the following requirements:

1. Associate Degree Comprehensive Requirements: refer to comprehensive requirements section.

2. Associate of Science Requirements:

A. Associate of Science Core Requirements: Courses listed below must be completed with a C grade or better.

Writing: All candidates must complete a minimum of six credits in English Composition by passing WR 121 and passing another lower division collegiate WR course with WR 121 as a prerequisite

Health: Complete HE 250 Personal Health and one credit of Physical Education (100 level or above) or HPE 295 Health and Fitness for Life
• Math*: Complete minimum of four credits in MTH 105 or any math course with MTH 95 as a prerequisite.
*Basic writing and math competency will be met by these requirements.

B. Distribution Requirements: Students must earn a minimum of 21 credits of General Education taken from the General Education Distribution/Discipline Studies List. A minimum of seven credits must be earned in each of the following distribution areas:
• Arts and Letters
• Social Sciences
• Mathematics, Science and Computer Studies

C. AS Elective Credit Requirements: All candidates must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective credits may include any lower division collegiate courses (course level of 100 or higher). A maximum of 3 credits of physical education (PE) courses maybe applied to this degree.

ASSOCIATE OF SCIENCE OREGON TRANSFER IN BUSINESS (ASOT-BUS)
The Associate of Science Oregon Transfer in Business degree is designed for students planning to transfer credits to any Oregon University System (OUS) school and seek entry into that institution’s business program. Students completing the ASOT-BUS degree will have met the lower-division General Education requirements of the OUS institution’s baccalaureate degree programs. Students transferring will have junior status for registration purposes.

Admission to the business school of an OUS institution is not guaranteed upon completion of the ASOT-BUS degree. It is strongly recommended that students contact the specific OUS institution’s business program early in the first term of their ASOT-BUS program to be advised of additional requirements.

The Associate of Science Oregon Transfer in Business is awarded to students who meet the following requirements:
1. Associate Degree Comprehensive Requirements: refer to comprehensive requirements section.
2. Associate of Science Oregon Transfer in Business Degree Requirements

All courses must be passed with a grade of “C” or better. Students must have a minimum cumulative GPA of 2.0 at the time the ASOT is awarded.

A. Foundational Requirements: Courses must be a minimum of 3 credits.
• Writing*: Writing: WR 121 and either 122 or 227. A student must have at least 8 credits of writing; Student may need to complete WR 121, 122 and 227 to meet the 8 credit requirement.
• Oral Communication: Speech 111 or 112 or 113
• Math*: A minimum of 3 courses MTH 111 or higher for which Intermediate Algebra is a prerequisite. One course must be Statistics

• Computer Applications: Students must demonstrate proficiency in word processing, spreadsheet, database, and presentation software by the successful completion of BA 131 or CAS 133 and CAS 170 or CAS 171.
*Basic Competency Requirements for writing and math will be met by successfully completing these courses. The Information Literacy requirement is satisfied by successful completion of the Writing courses.

B. Discipline Studies: Students must complete at least 11 Discipline Studies courses from the General Education /Discipline Studies List. All courses in Discipline studies must be a minimum of 3 credits. A course may count towards foundational requirements or discipline studies but not both.
• Arts and Letters: Complete at least 3 courses chosen from at least two disciplines in the this area
• Social Sciences: Complete at least 4 courses chosen from at least two disciplines in the this area. A minimum of 2 courses in Microeconomics and Macroeconomics must be included.
• Mathematics, Science and Computer Science: Complete at least 3 courses of laboratory courses in the biological or physical sciences.
• Cultural Literacy: Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for cultural literacy (as indicated on the General Education /Discipline Studies List). This course can be one of the 11 required Discipline Studies courses.

C. Business Specific Requirements: Each course must be completed with a C or better. BA 101, BA 211, BA 212, BA 213, and BA 226. BA 226 may be replaced by any other faculty-approved 200-level BA course.

D. Elective Credit Requirements: All candidates must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective courses may be any number of credits. Elective credits may include any lower division collegiate course. A maximum of 12 credits of Career and Technical Education courses may be applied to this degree. 1-credit MSD workshops may not be applied to this degree. A maximum of 3 credits of physical education (PE) may be applied to this degree.

UNIVERSITY SPECIFIC PREREQUISITES, RECOMMENDATIONS:
Each OUS school has different requirements for its Business program. Please refer to your school’s website for additional courses beyond the minimum requirements for the ASOT-BUS degree.

EASTERN OREGON UNIVERSITY
EOU.EDU/BUSINESS/BDM_COURSE_TRANSFER.HTM

OREGON INSTITUTE OF TECHNOLOGY
OIT.EDU/PROGRAMS/MANAGE

OREGON STATE UNIVERSITY
BUSINESS.OREGONSTATE.EDU/SERVICES/ARCHIVED-TRANSFER
ASSOCIATE OF ARTS OREGON TRANSFER (AAOT) DEGREE REQUIREMENTS

The Associate of Arts Oregon Transfer Degree is an opportunity for students to complete lower division degree requirements at PCC.

Any student having the Associate of Arts Oregon Transfer (AAOT) degree recognized on an official college transcript will have met the lower division general education requirements of baccalaureate degree programs of any institution in the Oregon University System.

Students transferring under this agreement will have junior status for registration purposes. Course, class standing or GPA, and requirements for specific majors, departments or schools are not necessarily satisfied by an AAOT degree.

All courses should be aligned with the student’s intended program of study and the degree requirements of the baccalaureate institution to which the student plans to transfer. A student is encouraged to work with an advisor in the selection of courses.

The Associate of Arts Oregon Transfer degree is awarded to students who meet the following requirements:

1. Associate Degree Comprehensive Requirements
2. Associate of Arts Oregon Transfer Degree Requirements:

All courses must be passed with a grade of “C-” or better. Students must have a minimum cumulative GPA of 2.0 at the time the AAOT is awarded.

A. Foundational Requirements: Courses must be a minimum of 3 credits (except for Health/Wellness/Fitness courses, which may be any number of credits)

- Writing*: WR 121 and either 122 or 227. A student must have at least 8 credits of Writing; WR 123 may be used to complete the 8 credits
- Oral Communication: Speech 111 or 112 or 113
- Math*: MTH 105 or higher for which Intermediate Algebra is a prerequisite.
- Health/Wellness/Fitness: One or more courses totaling at least three credits from HE 242, 250, 254, HPE 295, or PE (not including PE 10, 199 or 299).

*Basic Competency Requirements for writing and math will be met by successfully completing these courses. The Information Literacy requirement is satisfied by successful completion of the Writing courses.

B. Discipline Studies:

Students must complete at least 11 Discipline Studies courses from the General Education /Discipline Studies List. All courses in Discipline Studies must be a minimum of 3 credits. A course may count towards foundational requirements or discipline studies but not both.

- Arts and Letters: Complete at least 3 courses chosen from at least two disciplines in this area
- Social Sciences: Complete at least 4 courses chosen from at least two disciplines in this area
- Mathematics, Science and Computer Science: Complete at least 4 courses from at least two disciplines in this area, including at least three laboratory courses in biological and/or physical science
- Cultural Literacy: Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for cultural literacy (as indicated on the General Education /Discipline Studies List). This course can be one of the 11 required Discipline Studies courses.

C. Elective Credit Requirements:

All candidates must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective courses may be any number of credits. Elective credits may include any lower division collegiate course. A maximum of 12 credits of Career and Technical Education courses may be applied to this degree. 1-credit MSD workshops may not be applied to this degree. A maximum of 3 credits of physical education (PE) may be applied to this degree.

OREGON TRANSFER MODULE (OTM)

The Oregon Transfer Module (OTM) provides a one-year curriculum for students who plan to transfer to a State of Oregon community college or university. The module allows students to complete one year of general education foundation course work that is academically sound and will meet the admission standards of the receiving school. The OTM is not a certificate or degree.

Students should work closely with an academic advisor to ensure selection of appropriate course work. Upon transfer, students may be required to complete additional course work in General Education, or an academic major, that is specific to the receiving institution. Students who transfer prior to the completion of the Oregon Transfer Module will have their courses individually evaluated by the receiving institution.

Students must complete a minimum of 45 credits of lower division course work with a C- or better in order to complete the Oregon Transfer Module. Students only need to take one course at PCC that applies to the OTM to have PCC be the school which transcripts it.

GAINFUL EMPLOYMENT

For more information about our graduation rates, the median debt of students who complete the program, and other important information, visit www.pcc.edu/gainful.
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GENERAL EDUCATION/DISCIPLINE STUDIES

Candidates for all PCC degrees are required to complete credits from General Education/Discipline Studies. PCC courses which meet the requirement are detailed in the table of General Education/Discipline Studies. Students are responsible for consulting the institution to which they will transfer to determine how the credits will be accepted.

This General Education/Discipline Studies list may not be complete. For the most accurate and up to date version of this list please check the on-line catalog.

PCC General Education/Discipline Studies Philosophy
The faculty of Portland Community College affirms that a prime mission of the college is to aid in the development of educated citizens. Ideally, such citizens possess:

• understanding of their culture and how it relates to other cultures
• appreciation of history both from a global perspective and from a personal perspective, including an awareness of the role played by gender and by various cultures
• understanding of themselves and their natural and technological environments
• ability to reason qualitatively and quantitatively
• ability to conceptually organize experience and discern its meaning
• aesthetic and artistic values
• understanding of the ethical and social requirements of responsible citizenship

Such endeavors are a lifelong undertaking. The General Education component of the associate degree programs represents a major part of the college’s commitment to that process.

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AS - Applicable for AS Degree
AGS - Applicable for AGS Degree
ASOT-B - Applicable for ASOT Business Degree
✓ - Applicable for Cultural Literacy
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AAOT - Applicable for AAOT Degree  
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ASOT-B - Applicable for ASOT Business Degree  
✓ - Applicable for Cultural Literacy
## GENERAL EDUCATION/ DISCIPLINE STUDIES

### PORTLAND COMMUNITY COLLEGE  ■  2012-2013

#### SOCIAL SCIENCE

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#### MATHEMATICS, SCIENCE AND COMPUTER SCIENCE

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ALCOHOL AND DRUG COUNSELOR

Cascade Campus
Student Services Building(SSB), Room 313
Program Admissions: 971-722-5667
Program Advising: 971-722-5427
www.pcc.edu/addiction

CAREER AND PROGRAM DESCRIPTION
Alcohol and drug counselors work in public and private sector organizations to provide diagnosis, assessment, education, referral and treatment services to clients with alcohol and other drug problems. Students enter the program with a variety of educational goals: graduation, employment, professional upgrading and/or self improvement.

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
   Alcohol and Drug Counselor
Less than One-Year Certificate
   Addiction Studies

PREREQUISITES AND REQUIREMENTS
1. Completion of AD 101 Alcohol Use and Addiction, with a C or better.
2. Completion of WR 121 English Composition
3. Completion of LIB 101 Library Research and Beyond
4. Documentation of not abusing alcohol or drugs for 18 months prior to admission.
5. Complete the A&D Counselor Program application.
6. After a complete application is approved, the student should schedule an advising session with a program advisor.

While participating in the program, recovering students will agree to abstain from alcohol and illicit drug use. All other students must agree to not abuse alcohol and other drugs while in the program.

Anyone interested in working in the addiction counseling profession in the State of Oregon should be aware that a Criminal History Check as a condition of employment is a standard practice. A conviction does not automatically disqualify someone from obtaining employment. Each situation is evaluated on a case by case basis and therefore it is very difficult to predict in advance who can be employed in any given employment situation. It is commonplace for individuals with a conviction on their record to be employed in the addiction counseling profession. The Alcohol and Drug Counselor Program cannot determine in advance who is or is not employable due to their criminal history.

The majority of program courses are offered in late afternoons or evenings to accommodate students working during the day. A few courses are offered via distance learning format. The program has been designed to prepare individuals for entry into the alcohol and drug counseling field. The program also serves to update the skills of addiction counselors and related professionals. Criminal justice personnel, mental health counselors, health care workers, and prevention specialists have utilized our program for professional upgrading. Individuals wishing to take a specific course without acceptance in the program need to consult the department chair at 971-722-5254.

Four-year institutions may accept a portion of the program’s credits for application toward their degree. Students interested in pursuing their four year degree should contact a representative of their college of choice. Transferability of credits to another institution is subject to the approval of that institution.

Prior to being accepted into either the degree or certificate programs, students may enroll in AD 102, AD 103, AD 104, AD 184, WR 121, WR 122, PSY 239, MP 150; in any course from the Alcohol and Drug Counselor elective list; and in any General Education course."

The Addiction Studies Certificate is for persons with college degrees: Persons with an associates, bachelors, masters or higher degree from an accredited college or university may apply for admission to the addiction studies certificate program.

CERTIFIED ALCOHOL AND DRUG COUNSELOR EXAMINATION (CADC)
The CADC is granted by the Addiction Counselor Certification Board of Oregon (ACCBO). Completion of The Alcohol and Drug Counselor Program does not result in completion of the CADC. The programs coursework is designed to meet the educational requirements for the CADC II. All practicum hours contribute towards the work experience requirement for the CADC I.

ALCOHOL AND DRUG COUNSELOR AAS DEGREE
Minimum 99 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Alcohol and Drug Counselor Degree Credit Summary
AD  70
PSY  8
Remaining General Education  8
Alcohol and Drug Counselor Electives  6
WR  4
MP  3
Credit Total 99

Alcohol and Drug Degree Courses
AD  102  Drug Use and Addiction  3
AD  103  Women and Addiction  3
AD  104  Multicultural Counseling  3
AD  106  Smoking Cessation  1
AD  150  Basic Counseling and Addiction  3
AD  151  Basic Counseling Skills Mastery  1
AD  152  Group Counseling and Addiction  3
AD  153  Theories of Counseling  3
AD  154  Client Record Mgmt and Addiction  3
AD  155  Motivational Interviewing and Addiction  3
AD  156  Ethical and Professional Issues  3
PORTLAND COMMUNITY COLLEGE  □ 2012-2013

AMERICAN SIGN LANGUAGE

SEE SIGN LANGUAGE STUDIES

ANTHROPOLOGY

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH) Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7327

Sylvania Campus
Social Science, (SS) Room 215
971-722-4289

DESCRIPTION

Anthropology is the study of people. In this discipline, people are considered in all their biological and cultural diversities, in the present as well as in the prehistoric past and wherever people have existed. Students are introduced to the interaction between people and their environments to develop an appreciation of human adaptations past and present.

Anthropology can be a synthesizing focus for data from many fields of inquiry and has integral importance in preparing students to survive and play positive roles in our emergent transcultural world. Students can pursue careers in teaching, research and other fields after completing graduate work.

At PCC, the general anthropology and cultural anthropology sequences are offered yearly. All other courses may be offered less frequently. The department suggests, but does not require that students take cultural anthropology and field archaeology in sequential order. See the Course Description section of this catalog for individual Anthropology (ATH prefix) courses and specific course prerequisites.

APPRENTICESHIP

Cascade Campus
Technology Education Building (TEB), Room 103
971-722-5651, 971-722-5650

www.pcc.edu/apr

CAREER AND PROGRAM DESCRIPTION

Portland Community College provides courses in accordance with the Apprenticeship and Training Laws for the State of Oregon. These courses present technical instruction for the trades and are intended to complement on-the-job skills for both men and women. Each apprentice able trade has a Joint Apprenticeship and Training Committee (JATC) which outlines the procedures to become a journey person. This outline usually consists of two to five years of supervised, on-the-job experience in various aspects of the trade in conjunction with PCC course work. The JATC committees outline the type of supportive courses needed to prepare students to become qualified journey persons in addition to working with related training courses.

The Associate of Applied Science (AAS) in Industrial Technology Apprenticeship Degree was discontinued in Spring 2009. The new Statewide Apprenticeship degree pathways have replaced the old degree and offers AAS degrees and certificates of completion in electrical, manual construction trades, and industrial mechanics.
PORTLAND COMMUNITY COLLEGE  ■  2012-2013

and maintenance. Students transitioned to the new Statewide Apprenticeship Degrees and Certificates from Spring Term 2008 to Spring Term 2009. The ‘sunset period’ that was offered during the transition period is no longer available for the preceding Industrial Technology Degree.

Consult the Trades and Industry Department for assistance in program planning and transcript evaluation. It is recommended to have your graduation petition and transcript evaluation approved by a Trades and Industry Department advisor prior to filing your petition.

Students wanting to move into management, supervision, or small business management can transfer to Oregon Institute of Technology (OIT) with related-training credits toward a Bachelor of Science (BS) in Operations Management after earning an Apprenticeship AAS degree.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
  Electrician Apprenticeship Technologies
  Construction Trades, General Apprenticeship
  Industrial Mechanics and Maintenance
  Technology Apprenticeship

Certificate of Completion
  Limited Electrician Apprenticeship Technologies
  Electrician Apprenticeship Technologies
  Manual Trades Apprenticeship
  Construction Trades, General Apprenticeship
  Mechanical Maintenance Apprenticeship
  Industrial Mechanics and Maintenance
  Technology Apprenticeship

PREREQUISITES AND REQUIREMENTS

Students pursuing a designated and sponsored Oregon State Bureau of Labor and Industries occupation must meet entrance requirements for their chosen career.

JOURNEY PERSON LICENSE RENEWAL

PCC’s Trades and Industry Department is an approved training agent for continuing education for journey person electrical license renewal through the State of Oregon Electrical Licensing Division.

PRE-APPRENTICESHIP

PCC provides Pre-Apprenticeship opportunities to students seeking careers in the trades or an apprenticeship. These courses prepare students to apply for an apprenticeship, meet the minimum entry qualifications, and possibly boost your application score. Women and minorities are encouraged to participate.

The Trades Preparation course covers construction trade topics, industry orientation, material handling, scaffolding, rigging, hand and power tool use, 30 hour OSHA safety certification, site visits and mock interviews. This course is approved by the Oregon Apprenticeship Council as an authorized Pre-Apprenticeship course.

The Exploring Trades and Apprenticeship course explores career opportunities within the Trades. It introduces resources for assisting students in identifying the skills needed to succeed in these fields.

Consult the Trades and Industry Department for assistance in program planning.

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES PATHWAY

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES AAS DEGREE

4000, 6000 or 8000 Hour BOLI-ATD Trades:
  • College credit courses for Related-Training: 16 – 75 credits
  • General Education: 16 credits
  • Credit for Prior Certification: 0 – 22 credits
  • Approved Program Electives: 0 – 41 credits
  • Total Credits: 90 – 108 credits

The AAS degree total credit requirement depends upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee, however a minimum of 90 credits is required for all degrees.

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES CERTIFICATE

6000 Hour BOLI-ATD Trades: Limited Energy Technician-License A and Sign Maker/Fabricator

8000 Hour BOLI-ATD Trades: Inside Electrician, Limited Manufacturing Plant Electrician, Sign Assembler/Fabricator, Sign Maker/Erector and Stationary Engineer

6000-8000 Hour BOLI-ATD Trades:
  • College credit courses for Related-Training: 16 – 99 credits
  • Related Instruction: 9 credits*
  • Credit for Prior Certification: 0 credits
  • Approved Program Electives: 0 credits
  • Total Credits: 25 – 108 credits

*See related instruction list for approved courses

This certificate requires a minimum of 16 credits of related classroom training as well as 9 credits of related instruction. Embodied in this certificate are many state certifications. Both the total related training credits and the total related instruction credits depend upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee.

LIMITED ELECTRICIAN APPRENTICESHIP TECHNOLOGIES CERTIFICATE

4000 Hour BOLI-ATD Trades: Limited Energy Technician- License B, Limited Maintenance Electrician, Limited Renewable Energy Technician, and Limited Residential Electrician

4000 Hour BOLI-ATD Trades:
  • College credit courses for Related-Training: 16 – 44 credits
  • Related Instruction: 0 credits
  • Credit for Prior Certification: 0 credits
  • Approved Program Electives: 0 credits
  • Total Credits: 16 – 44 credits

This certificate requires a minimum of 16 credits of related classroom training. Embodied in this Certificate are many state certifications. The total related training credits required depend upon which state apprenticeship the student is pursuing and
the requirements of the governing Joint Apprenticeship and Training Committee.

**CONSTRUCTION TRADES, GENERAL APPRENTICESHIP PATHWAY**

**CONSTRUCTION TRADES, GENERAL APPRENTICESHIP AAS DEGREE**

4000, 6000 and 8000 Hour BOLI-ATD Trades:
- College credit courses for Related-Training: 16 – 75 credits
- General Education: 16 credits
- Credit for Prior Certification: 0 – 22 credits
- Approved Program Electives: 0 – 41 credits
- Total Credits: 90 – 108

The AAS degree total credit requirement depends upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee, however a minimum of 90 credits is required for all degrees.

**CONSTRUCTION TRADES, GENERAL APPRENTICESHIP CERTIFICATE**

6000-8000 Hour BOLI-ATD Trades: Asbestos Removal, Carpenter, Exterior/Interior Finisher, HVAC/R, Painter, Pile Driver, Plumber, Scaffold Erector, and Sheet Metal Worker

6000-8000 Hour BOLI-ATD Trades:
- College credit courses for Related-Training: 16 – 99 credits
- Related Instruction: 9 credits*
- Credit for Prior Certification: 0 credits
- Approved Program Electives: 0 credits
- Total Credits: 25 – 108 credits

*See related instruction list for approved courses

This certificate requires a minimum of 16 credits of related classroom training as well as 9 credits of related instruction. Embodied in this certificate are many state certifications. Both the total related training credits and the related instruction credits depend upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee.

**MANUAL TRADES APPRENTICESHIP CERTIFICATE**

4000-Hour BOLI-ATD Trades: Brick Mason, Concrete Finisher, Floor Covering Installer, Glazier/Glass Worker, Laborer, Plasterer, and Roofer

4000 Hour BOLI-ATD Trades:
- College credit courses for Related-Training: 16 - 44 credits
- Related Instruction: 0 credits
- Credit for Prior Certification: 0 credits
- Approved Program Electives: 0 credits
- Total Credits: 16 – 44 credits

This certificate requires a minimum of 16 credits of related classroom training. Embodied in this certificate are many state certifications. The total related training credits required depend upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee.

**INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP CERTIFICATE**

**INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP AAS DEGREE**

4000 or 8000 Hour BOLI-ATD Trades:
- College credit courses for Related-Training: 16 – 75 credits
- General Education: 16 credits
- Credit for Prior Certification: 0 – 22 credits
- Approved Program Electives: 0 – 41 credits
- Total Credits: 90 – 108 credits

The AAS degree total credit requirement depends upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee, however a minimum of 90 credits is required for all degrees.

**INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP CERTIFICATE**


8000 Hour BOLI-ATD Trades:
- College credit courses for Related-Training: 16 – 99 credits
- Related Instruction: 9 credits*
- Credit for Prior Certification: 0 credits
- Approved Program Electives: 0 credits
- Total Credits: 25 – 108 credits

*See related instruction list for approved courses

This certificate requires a minimum of 16 credits of related classroom training as well as 9 credits of related instruction. Embodied in this certificate are many state certifications. Both the total related training credits and the related instruction credits depend upon which state apprenticeship the student is pursuing and the requirements of the governing Joint Apprenticeship and Training Committee.

**MECHANICAL MAINTENANCE APPRENTICESHIP CERTIFICATE**

4000 Hour BOLI-ATD Trades: Air Frame and Power Plant Technicians, Boiler Operator, and Programmable Logic Controller

4000 Hour BOLI-ATD Trades:
- College credit courses for Related-Training: 16 – 44 credits
- Related Instruction: 0 credits
- Credit for Prior Certification: 0 credits
- Approved Program Electives: 0 credits
- Total Credits: 16 – 44 credits

This certificate requires a minimum of 16 credits of related classroom training. Embodied in this certificate are many state certifications. The total related training credits required depend upon which state apprenticeship the student is pursuing and
the requirements of the governing Joint Apprenticeship and Training Committee.

RELATED INSTRUCTION

For related instruction, choose one course from each category for a minimum of 9 credits from the following lists: (Many other classes are available to meet Related Instruction; substitutes can be approved by the Department.) Consult the Trades and Industry Department for assistance in program planning.

Computation:
- PHY 101 Fundamentals of Physics I
Communication:
- WR 115 Introduction to Expository Writing
- WR 121 English Composition
- SP 100 Introduction to Speech
Human Relations:
- PSY 101 Psychology and Human Relations
- SOC 204 Sociology in Everyday Life
- PSY 216 Social Psychology

ARCHITECTURAL DESIGN AND DRAFTING

Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4163
www.pcc.edu/arch

CAREER AND PROGRAM DESCRIPTION

This two-year associate of applied science degree program helps students develop the design and technical skills needed in the residential and commercial building design industry.

Career possibilities exist for both self-employment and working for hire. Graduates may pursue various design and drafting jobs with residential designers, construction firms, interior designers, engineers, architects, architectural product manufacturers, city, county, state and federal drafting departments and corporate drafting departments.

The Architectural Design and Drafting Department should be contacted for program advising, program costs and employment opportunity information. Consult a program advisor for information on PCC’s policy on acceptance of courses taken at other colleges or high schools or the transferability of PCC courses to other colleges. Students should attend a group advising prior to enrollment. See department web page for a list of current scheduled dates.

Students may transfer from Portland Community College to other colleges or universities to complete a bachelor’s degree in Architecture or related field. Students interested in transferring should see an Architectural Design program advisor.

Students must receive a C or better in all required classes in order to receive a degree in Architectural Design and Drafting. Pass/No pass grades are not accepted.

The Sustainable Design Certificate provides course work from architecture, interior design, building construction, social sciences and science as it relates to sustainable, or “green” building issues. This program will focus on creating buildings that are sited, designed, constructed, operated, and maintained for the health and well being of the occupants, while minimizing impact on the environment. See an advisor for current list of required courses.

The Kitchen and Bath Certificate includes course work from Architecture and Interior Design and prepares the student to take the National Kitchen and Bath Association exams to become an Associated Certified Kitchen and/or Bath Designer.

The Kitchen and Bath Certificate: It is recommended that students without prior drafting experience take ARCH 110 Introduction to Architectural Drawing and ARCH 126 Introduction to AutoCAD prior to starting the certificate.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
- Architectural Design and Drafting
- Architectural Design and Drafting-Residential Option

One-Year Certificate
- Kitchen and Bath

Less than One-Year Certificate
- Sustainable Design

PREREQUISITES AND REQUIREMENTS

Students new to the program must take the college’s placement exams for math and English prior to program advising and registration. Students must place in MTH 60 or higher and WR 115 or higher before registering for beginning architectural design and drafting classes or have department approval.

ARCHITECTURAL DESIGN AND DRAFTING AAS DEGREE

Minimum 99 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Architectural Design and Drafting Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>72</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>ARCH Degree Electives</td>
<td>8</td>
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<tr>
<td>ART</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>99</strong></td>
</tr>
</tbody>
</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 126</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 127</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>2</td>
</tr>
</tbody>
</table>
### Second Term
- **ARCH 101**: Introduction to Residential Design 3
- **ARCH 121**: Structural Systems I 2
- **ARCH 132**: Residential Building Codes 2
- **ARCH 136**: Intermediate AutoCAD 3
- **ART 215**: History of American Residential Architecture 3

### Third Term
- **ARCH 111**: Introduction to Residential Construction Documents 3
- **ARCH 162**: Commercial Print Reading 2
- **ARCH 237**: Intro to Revit Architecture 3
- **ARCH 256**: Detail Drawing with AutoCAD 3
- **General Education**

### Fourth Term
- **ARCH 112**: Introduction to Commercial Construction Documents 4
- **ARCH 113**: Site Planning 2
- **ARCH 122**: Structural Systems II 3
- **ARCH 133**: Commercial Building Codes 2
- **General Education** 4

### Fifth Term
- **ARCH 123**: Structural Systems III 3
- **ARCH 201**: Residential Studio 6
- **ARCH Degree Electives** 5

### Sixth Term
- **ARCH 202**: Commercial Studio 4
- **ARCH 224**: Active and Passive Building Systems 4
- **ARCH Degree Electives** 3
- **General Education** 4

### Seventh Term
- **ARCH 203**: Residential Renovation Studio 6
- **ARCH 280**: CE: Architectural Design and Drafting 4
- **General Education** 4

### Architectural Degree Electives
- **ARCH 100**: Graphic Communication for Designers 3
- **ARCH 113**: Sustainable Building Strategies 4
- **ARCH 134**: Energy and Alternative Materials Code 2
- **ARCH 200**: Principles of Architectural Design 4
- **ARCH 204**: Green Residential Studio 4
- **ARCH 247**: Intermediate Revit Architecture 3
- **BCT 108**: Intro to Building Science 3
- **BCT 115**: Introduction to Residential Green Roofing 1
- **BCT 116**: Alternative Building Design 3
- **ID 121**: Sustainable Materials for Residential Interiors 3
- **ID 131**: Introduction to Interiors 3
- **ID 133**: Space Planning 3
- **ID 135**: Professional Practice for Designers 3
- **ID 138**: Introduction to Kitchen and Bath Planning 3
- **ID 236**: Lighting Design 3
- **ID 238**: Advanced Kitchen and Bath Planning 3

### Architectural Design and Drafting - Residential Degree Credit Summary
- **ARCH**: 62
- **ID**: 15
- **General Education**: 16
- **ART**: 3
- **Residential CAD Electives**: 3

### COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

#### First Term
- **ARCH 100**: Graphic Communication for Designers 3
- **ARCH 110**: Introduction to Architectural Drawing 2
- **ARCH 126**: Introduction to AutoCAD 3
- **ARCH 161**: Residential Print Reading 2
- **ID 131**: Introduction to Interiors 3

#### Second Term
- **ARCH 124**: Introduction to Building Systems 3
- **ARCH 132**: Residential Building Codes 2
- **ARCH 136**: Intermediate AutoCAD 3
- **ART 215**: History of American Residential Architecture 3
- **ID 133**: Space Planning 3

#### Third Term
- **ARCH 101**: Intro to Residential Design 3
- **ARCH 121**: Structural Systems I 2
- **ARCH 256**: Detailing Drawing with AutoCAD 3
- **ID 138**: Intro to Kitchen and Bath Planning 3
- **Residential CAD Electives** 3

#### Fourth Term
- **ARCH 111**: Introduction to Residential Construction Documents 3
- **ARCH 113**: Site Planning 2
- **ARCH 122**: Structural Systems II 3
- **ARCH 224**: Active and Passive Building Systems 4
- **General Education** 4

#### Fifth Term
- **ARCH 201**: Residential Studio 6
- **ID 121**: Sustainable Materials for Residential Interior 3
- **ID 236**: Lighting Design 3
- **General Education** 4

#### Sixth Term
- **ARCH 200**: Principles of Architectural Design 4
- **ARCH 202**: Commercial Studio 4
- **General Education** 8

#### Seventh Term
- **ARCH 203**: Residential Renovation Studio 6
- **ARCH 280**: CE: ARCH Design and Drafting 4
- **General Education** 4

### Residential CAD Electives
- **ARCH 127**: Introduction to Google SketchUP 3
- **ARCH 237**: Introduction to Revit Architecture 3
- **ARCH 247**: Intermediate Revit Architecture 3

**ARCHITECTURAL DESIGN AND DRAFTING - RESIDENTIAL AAS DEGREE**

Minimum 99 credit. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.
KITCHEN AND BATH ONE-YEAR CERTIFICATE

Minimum 51 credits. Students must also meet certificate requirements. The Kitchen and Bath Certificate is a related certificate. All courses are contained in the Interior Design AAS Degree.

Kitchen and Bath Certificate Credit Summary

ID 34
ARCH 12
BCT 2
BA 3
ART 3
Credit Total 51

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>Graphic Communication for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>ID 125</td>
<td>Computer Drafting for Interior Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 132</td>
<td>Planning Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 133</td>
<td>Space Planning</td>
<td>3</td>
</tr>
<tr>
<td>ID 138</td>
<td>Introduction to Kitchen and Bath Planning</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 244</td>
<td>Kitchen and Bath Cabinet Installation</td>
<td>2</td>
</tr>
<tr>
<td>ID 135</td>
<td>Professional Practice for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID 225</td>
<td>CAD for Kitchen and Bath Design</td>
<td>1</td>
</tr>
<tr>
<td>ID 236</td>
<td>Lighting Design</td>
<td>3</td>
</tr>
<tr>
<td>ID 238</td>
<td>Advanced Kitchen and Bath Planning</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 121</td>
<td>Structural Systems I</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>Residential Building Code</td>
<td>2</td>
</tr>
<tr>
<td>ART 215</td>
<td>History of American Residential Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ID 280A</td>
<td>CE: Kitchen and Bath</td>
<td>6</td>
</tr>
</tbody>
</table>

SUSTAINABLE DESIGN LESS THAN ONE-YEAR CERTIFICATE

Minimum 43 credits. Students must meet certificate requirements.

Sustainable Design Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 20</td>
<td>Design and Building Electives</td>
<td>20</td>
</tr>
<tr>
<td>ID 121</td>
<td>General Environmental Electives</td>
<td>8</td>
</tr>
<tr>
<td>ID 280A</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Credit Total 43

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 113</td>
<td>Site Planning</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 134</td>
<td>Energy Conservation Code</td>
<td>2</td>
</tr>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>Design and Building Electives</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>General Environmental Electives</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 131</td>
<td>Sustainable Building Strategies</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 224</td>
<td>Active and Passive Bldg Systems</td>
<td>4</td>
</tr>
<tr>
<td>Design and Building Electives</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>General Environmental Electives</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 204</td>
<td>Green Residential Studio</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 280</td>
<td>CE: Arch Design and Drafting</td>
<td>4</td>
</tr>
<tr>
<td>Design and Building Electives</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Design and Building Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 256</td>
<td>Detail Drawings with AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>BCT 108</td>
<td>Introduction to Building Science</td>
<td>2</td>
</tr>
<tr>
<td>BCT 115</td>
<td>Introduction to Residential Greenroofing</td>
<td>1</td>
</tr>
<tr>
<td>BCT 116</td>
<td>Alternative Building Design</td>
<td>3</td>
</tr>
<tr>
<td>ID 236</td>
<td>Lighting Design</td>
<td>3</td>
</tr>
<tr>
<td>LAT 272</td>
<td>Sustainable Landscaping</td>
<td>3</td>
</tr>
</tbody>
</table>

General Environmental Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 200B</td>
<td>Principles of Ecology: Field Biology</td>
<td>4</td>
</tr>
<tr>
<td>ESR 171</td>
<td>Environmental Science: Biological Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>ESR 172</td>
<td>Environmental Science: Chemical Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>GEO 210</td>
<td>The Natural Environment</td>
<td>4</td>
</tr>
<tr>
<td>PHL 206</td>
<td>Introduction to Environmental Ethics</td>
<td>4</td>
</tr>
<tr>
<td>SOC 228</td>
<td>Environmental Sociology</td>
<td>4</td>
</tr>
</tbody>
</table>

ART

Cascade Campus
 Moriarty Arts and Humanities Building (MAHB), Room 105
971-722-5430

Rock Creek Campus
 Building 3, Room 201
971-722-7235

Southeast Center
 Mt. Scott Hall (MSH), Room 103
971-722-6147

Sylvania Campus
 Communications Technology Building (CT), Room 216
971-722-4264

www.pcc.edu/programs/art/

DESCRIPTION

The Art program at PCC offers foundations-level concentrations in studio arts and art history. Art and art history courses acknowledge the significance of visual literacy and communication through fine art. The Art program provides students with ways to demonstrate and realize their potential. Art students apply a wide
range of problem solving methods, technical skills, critical thinking skills, and cultural awareness to their professions, communities and the world.

PCC’s Art program provides a rigorous and rewarding arts education to students moving in to upper-division courses for a baccalaureate degree and many art classes satisfy requirements for the Associate of Arts Oregon Transfer degree. See the Course Description (ART prefix) section of this catalog for individual Art courses and specific course prerequisites.

ASIAN STUDIES

SEE FOCUS AWARDS SECTION OF THE CATALOG.

AUTO COLLISION REPAIR TECHNOLOGY

Rock Creek Campus
Building 2, Room 131 - Shop
Building 2, Room 230 - Office
971-722-7331
www.pcc.edu/ab

CAREER AND PROGRAM DESCRIPTION

Collision repair technicians possess the skills required to return a collision damaged vehicle to its pre-accident condition. Among these skills are metal working, welding, mechanical, electrical, air conditioning, plastic repair, shaping and forming fillers, structural analysis and repair, and four wheel suspension alignment.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Auto Collision Repair Technology

Two-Year Certificate
Auto Collision Repair Technology

Less than One-Year Certificate
Auto Body Painting
Auto Collision Repair Technology

PREREQUISITES AND REQUIREMENTS

None currently.

AUTO COLLISION REPAIR TECHNOLOGY AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Auto Collision Repair Technology Degree Credit Summary

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>72</td>
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</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AB 100</td>
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Second Term

<table>
<thead>
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<th>Term</th>
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<tbody>
<tr>
<td></td>
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Third Term

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<th>Course</th>
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<tbody>
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Fourth Term

<table>
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<th>Term</th>
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Fifth Term

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Sixth Term

<table>
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<th>Term</th>
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<tbody>
<tr>
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<td>2</td>
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<tr>
<td></td>
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</table>

AUTO COLLISION REPAIR TECHNOLOGY TWO-YEAR CERTIFICATE

Minimum 72 credits. Students must meet certificate requirements. The Auto Collision Repair Technology Certificate is a related certificate. All courses are contained within the Auto Collision Repair Technology AAS Degree.

Auto Collision Repair Technology Certificate Credit Summary

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AB 100</td>
<td>12</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AB 105</td>
<td>12</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
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Fourth Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AB 201</td>
<td>12</td>
</tr>
</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AB 205</td>
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</table>

Sixth Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<td>AB 280A</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>AB 280B</td>
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</tbody>
</table>
AUTO BODY PAINTING LESS THAN ONE-YEAR CERTIFICATE
Minimum 36 credits. Students must meet certificate requirements.

Auto Body Painting Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AB</td>
<td>36</td>
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</tbody>
</table>

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- AB 116 Auto Painting I 12

Second Term
- AB 117 Auto Painting II 12

Third Term
- AB 118 Auto Painting III 12

AUTO COLLISION REPAIR TECHNOLOGY LESS THAN ONE-YEAR CERTIFICATE
Minimum 36 credits. Students must meet certificate requirements. The Auto Collision Repair Technology Certificate is a related certificate. All courses are contained in the Auto Collision Repair Technology AAS Degree.

Auto Collision Repair Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>36</td>
</tr>
</tbody>
</table>

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- AB 100 Auto Body Basic Skills 12

Second Term
- AB 105 Frame Analysis and Repair 12

Third Term
- AB 106 Panel Repair 12

AUTOMOTIVE SERVICE TECHNOLOGY
Sylvania Campus
Automotive Metals Building (AM), Room 210
971-722-4130
www.pcc.edu/ast

CAREER AND PROGRAM DESCRIPTION
The automotive service technician maintains, diagnoses and repairs mechanical, hydraulic, fuel and electrical systems on modern automobiles and light-duty trucks. Automotive Service Technology graduates find jobs in independent repair shops, dealerships and fleet maintenance facilities. Some start their own businesses.

The PCC Automotive Service Technology Department provides flexible, career-oriented automotive repair education and training in an authentic and diverse environment. As a PCC Automotive student, you may prepare for any segment of the repair industry, including dealerships, fleets and independent repair shops. Partnerships between PCC and automotive repair businesses will allow you to learn in the classroom and on the job.

PCC Automotive provides comprehensive training to technicians already working in the field. See the Automotive Department chairperson to develop a personalized training plan.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Automotive Service Technology
Automotive Service Technology: Automotive Service Education Program Option (Suspended)

Two-Year Certificate
Automotive Service Technology

PREREQUISITES AND REQUIREMENTS
Applicants must take the placement test administered through test centers located at each campus. To begin the program, students must place into (RD 90 and WR 90) or (ESOL 260, 262, and 264) and into MTH 60 or higher-level math class. Students who place below MTH 60 must successfully complete MTH 20 and be ready for MTH 60 before registering for the automotive program. The Automotive Service Technology Program accepts new students three times a year. New students must contact the PCC Automotive Department for advising and registration.

Students may select a certificate or degree program that meets their needs. The program consists of instructional modules of seventeen days, each module being an intensive course in a specialized area. At the completion of each module, students are assessed according to their success in meeting course outcomes. The automotive modules consist of lecture and hands-on laboratory work. Students will have additional costs for tools and equipment.

AUTOMOTIVE SERVICE TECHNOLOGY AAS DEGREE
Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Automotive Service Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AM</td>
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<td>General Education</td>
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<tr>
<td>CG</td>
<td>1</td>
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COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- AM 100 Introduction to Automotive 4
- AM 111 Engine Repair 4
- AM 161 Electrical Systems I 4
- CG 209 Job Finding Skills 1
- General Education 4
### Second Term
- AM 151 Undercar Systems I 4
- AM 141 Undercar Systems II 4
- AM 142 Undercar Systems III 4
- General Education 4

### Third Term
- AM 162 Electrical Systems II 4
- AM 163 Electrical Systems III 4
- AM 171 Heating and Air Conditioning Systems 4
- General Education 4

### Fourth Term
- AM 181 Engine Performance I 4
- AM 182 Engine Performance II 4
- AM 183 Engine Performance III 4

### Fifth Term
- AM 131 Drive Train Systems I 4
- AM 121 Drive Train Systems II 4
- AM 132 Drive Train Systems III 4

### Sixth Term
- AM 201 Auto Shop Lab I 4
- AM 202 Auto Shop Lab II 4
- AM 203 Auto Shop Lab III 4

### Seventh Term
- AM 280A CE: Automotive Services 8

1. Class must be completed before enrolling in cooperative education (AM 280A.)

### AUTOMOTIVE SERVICE EDUCATIONAL PROGRAM (ASEP)

The AAS degree in General Motors Automotive Service Education (ASEP) has been suspended. The Automotive Service Technology program will continue to be offered. For more information or availability of individual courses, please contact the department advisor at 971-722-4130 or visit www.pcc.edu/ast.

### AVIATION MAINTENANCE TECHNOLOGY

Rock Creek Campus
Building 2, Room 230
971-722-7246
www.pcc.edu/amt

### CAREER AND PROGRAM DESCRIPTION

An aircraft mechanic certified under Part 65 of the Federal Aviation Regulations may maintain or alter aircraft within limitations specified by the regulations. The certificate also permits the holder to supervise other people in maintaining aircraft and to approve work for return to service. In addition, the certified mechanic may perform 100-hour inspections. After performing 100-hour inspections or maintenance, the mechanic must certify airworthiness or approval for return to service in a signed entry in the appropriate aircraft record.

The Aviation Maintenance Technology Program is approved by the State Division of Vocational Education, the Veterans Administration and the Federal Aviation Administration.

The certified AMT mechanic is considered to be a general practitioner at keeping aircraft in safe condition and may also decide to specialize in: hydraulics, pneumatics, rigging, inspection, bonded repair, corrosion control, sheet metal repair, electrical systems, avionics installation, propeller service, welding, painting, record keeping or engine service.

### DEGREES AND CERTIFICATES OFFERED

- **Associate of Applied Science Degree**
  - Aviation Maintenance Technology

- **Two-Year Certificate**
  - Aviation Maintenance Technology

- **One-Year Certificate**
  - Aviation Maintenance Technology: Airframe
  - Aviation Maintenance Technology: Powerplant
PREREQUISITES AND REQUIREMENTS

Prerequisite for all AMT Certificates and AAS degree:

- Completion of AMT 101
- Placement into RD 90 or higher
- Placement into WR 90 or higher
- Students must complete MTH 60 at PCC or concurrently enrolled in PCC MTH 60 with the first term of AMT courses.
- OR
- Students with placement score into higher than MTH 60 or have taken MTH 60 or higher at another institution, must take the (free) AMT department math test. To take this test students must have their transcripts evaluated by an academic advisor for math placement and contact the AMT department chair for permission to take the test. This test must be passed prior to registration for the first term of AMT courses.

The Aviation Maintenance Program is offered in a recommended sequence of 24 courses, each an 18-day module. However, flexibility in program design does allow some variation in sequence. Any variation must be approved by the department representative.

The program is divided into the following three areas of study:

General Subject Areas: These courses, plus demonstrated math competency, contain requirements which are common to both airframe and powerplant ratings. AMT 203 and AMT 204 are required prior to entry into the airframe and powerplant areas.

Airframe Subject Areas: Students who have completed all of the courses in the airframe and general subject areas, plus WLD 210, may receive a certificate of completion which qualifies them to take FAA tests for an Aviation Mechanic Certificate with the Airframe rating.

Powerplant Subject Areas: Students who have completed all of the courses in the powerplant and general subject areas may receive a certificate of completion which qualifies them to take FAA tests for an Aviation Mechanic Certificate with the Powerplant rating.

AVIATION MAINTENANCE TECHNOLOGY AAS DEGREE

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Aviation Maintenance Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT</td>
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<td>General Education</td>
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COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>AMT 106</td>
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<tr>
<td>AMT 107</td>
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<tr>
<td>General Education</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>AMT 102</td>
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<tr>
<td>AMT 203</td>
<td>4</td>
</tr>
<tr>
<td>AMT 204</td>
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</tbody>
</table>

AVIATION MAINTENANCE TECHNOLOGY TWO-YEAR CERTIFICATE

Minimum 92 credits. Students must meet certificate requirements. The Aviation Maintenance Technology Certificate is a related certificate. All courses are contained in the Aviation Maintenance Technology AAS Degree.

Aviation Maintenance Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
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<td>AMT</td>
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COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
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<tr>
<td>AMT 106</td>
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</tr>
<tr>
<td>AMT 107</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
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<td>AMT 102</td>
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<td>AMT 203</td>
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<td>AMT 204</td>
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<td>Term</td>
<td>Course Code</td>
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<tr>
<td>Third Term</td>
<td>AMT 108</td>
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<td></td>
<td>AMT 109</td>
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<tr>
<td></td>
<td>AMT 208</td>
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<td>AMT 211</td>
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<tr>
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<td>AMT 212</td>
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<td>AMT 213</td>
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<td></td>
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<td>AMT 216</td>
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<td>Sixth Term</td>
<td>AMT 121</td>
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<td>AMT 222</td>
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<td>AMT 225</td>
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</table>

**AVIATION MAINTENANCE TECHNOLOGY: AIRFRAME ONE-YEAR CERTIFICATE**

Minimum 58 credits. Students must meet certificate requirements. The Airframe Certificate is a related certificate. All courses within the certificate are contained in the Aviation Maintenance Technology AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

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<tr>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
<td>AMT 105</td>
<td>Aviation CFRs and RelatedSubjects</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 106</td>
<td>Aircraft Applied Science</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 107</td>
<td>Materials and Processes</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>AMT 102</td>
<td>Aircraft Electricity I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 203</td>
<td>Aircraft Electricity II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 204</td>
<td>Aircraft Electricity III</td>
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<tr>
<td>Third Term</td>
<td>AMT 108</td>
<td>AMT Practicum/General</td>
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<tr>
<td></td>
<td>AMT 109</td>
<td>Assembly and Rigging</td>
<td>4</td>
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<tr>
<td></td>
<td>AMT 208</td>
<td>Aircraft Systems</td>
<td>4</td>
</tr>
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<td></td>
<td>AMT 211</td>
<td>Composite Structures</td>
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<tr>
<td>Fourth Term</td>
<td>AMT 212</td>
<td>Sheet Metal</td>
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<tr>
<td></td>
<td>AMT 213</td>
<td>Hydraulics Pneumatics and Landing Gear</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>WLD 210</td>
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<table>
<thead>
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<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<td>AMT 115</td>
<td>Aircraft Structures and Inspection</td>
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<tr>
<td></td>
<td>AMT 214</td>
<td>Instruments, Communication and Navigation Systems</td>
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</tr>
<tr>
<td></td>
<td>AMT 216</td>
<td>AMT Practicum/Airframe</td>
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</table>

**AVIATION MAINTENANCE TECHNOLOGY: POWERPLANT ONE-YEAR CERTIFICATE**

Minimum 60 credits. Students must meet certificate requirements. The Powerplant Certificate is a related certificate. All courses are contained in the Aviation Maintenance Technology AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
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</table>

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
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<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>AMT 105</td>
<td>Aviation CFRs and Related Subjects</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 106</td>
<td>Aircraft Applied Science</td>
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</tr>
<tr>
<td></td>
<td>AMT 107</td>
<td>Materials and Processes</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>AMT 102</td>
<td>Aircraft Electricity I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 203</td>
<td>Aircraft Electricity II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 204</td>
<td>Aircraft Electricity III</td>
<td>4</td>
</tr>
<tr>
<td>Third Term</td>
<td>AMT 108</td>
<td>AMT Practicum/General</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AMT 121</td>
<td>Turbine Engine Theory and Maintenance</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 123</td>
<td>Ignition Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 219</td>
<td>Turbine Engine Overhaul</td>
<td>4</td>
</tr>
<tr>
<td>Fourth Term</td>
<td>AMT 117</td>
<td>Reciprocating Engine Theory and Maintenance</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 120</td>
<td>Propellers and Engine Installation</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 124</td>
<td>Fuel Metering Systems</td>
<td>4</td>
</tr>
<tr>
<td>Fifth Term</td>
<td>AMT 218</td>
<td>Powerplant Inspection</td>
<td>4</td>
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<tr>
<td></td>
<td>AMT 222</td>
<td>Reciprocating Engine Overhaul</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 225</td>
<td>AMT Practicum/Powerplant</td>
<td>2</td>
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</tbody>
</table>

**AVIATION SCIENCE**

Rock Creek Campus
Building 2, Room 230
971-722-7256

Southeast Center
Mt. Tabor Hall (MTH), Room 128
971-722-6176

[www.pcc.edu/fly](http://www.pcc.edu/fly)

**CAREER AND PROGRAM DESCRIPTION**

The traditional entry-level position for professional airplane and helicopter pilots is as a certified flight instructor (CFI). This position offers the opportunity to gain experience sought by companies that employ pilots in a variety of interesting and challenging positions. Career opportunities for airplane pilots include work in flight instruction, charter, corporate cargo, and airline industries.
Career opportunities for helicopter pilots include flight instruction, charter, corporate, air-ambulance and external load operations. Flight classes are conducted at Hillsboro Aviation, an accredited FAA Part 141 certified flight school, located at the Hillsboro and Troutdale Airports. Additional fees apply for these classes. Visit the department website for a list of fees.

**DEGREES AND CERTIFICATES OFFERED**

**Associate of Applied Science Degree**
- Aviation Science Airplane
- Aviation Science Helicopter

**PREREQUISITES AND REQUIREMENTS**

The Aviation Science program is a restricted entry program with limited enrollment. Applicants must take the placement test administered through the campus assessment centers. Minimum test scores:

- Placement into MTH 65 or higher
- Placement into WR 121 or higher

Attendance at an aviation science orientation or individual advising recommended prior to beginning the program. Please see [www.pcc.edu/fly](http://www.pcc.edu/fly) for dates or contact the Aviation Science Department for dates or appointments.

Additionally, the FAA requires a Class II Medical Certificate prior to beginning flight training. See [www.pcc.edu/fly](http://www.pcc.edu/fly) and click on “Getting Started” for details.

**AVIATION SCIENCE - AIRPLANE AAS DEGREE**

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Aviation Science - Airplane Degree Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aviation Science</td>
<td>68</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>GS</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Aviation Science Program Electives</td>
<td>2</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>

**COURSE OF STUDY: FLIGHT INSTRUCTOR OPTION**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td><strong>Flight Prep Lab Level I</strong></td>
<td>1</td>
</tr>
<tr>
<td>AVS 107</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVS 120</td>
<td>Airplane: Private Pilot Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 125</td>
<td>Airplane: Private Pilot Flight</td>
<td>4</td>
</tr>
<tr>
<td>AVS 127</td>
<td>Introduction to Aviation</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

| **Second Term** | **Flight Prep Lab Level I** | 1 |
| AVS 107 |                             |
| AVS 130 | Instrument Ground School   | 4 |
| AVS 135 | Airplane: Instrument Flight | 3 |
| AVS 137 | Applied Aerodynamics       | 4 |

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 107 Flight Prep Lab Level I</td>
<td>1</td>
</tr>
<tr>
<td>AVS 140 Airplane: Commercial Pilot Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 145 Introduction to Commercial Airplane</td>
<td>3</td>
</tr>
<tr>
<td>AVS 157 Aircraft Systems and Structures I: Airframe</td>
<td>3</td>
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**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 207 Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 225 Airplane: Commercial Flight</td>
<td>4</td>
</tr>
<tr>
<td>GS 109 Meteorology*</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
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</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>AVS 167 Aircraft Systems: Powerplant</td>
<td>3</td>
</tr>
<tr>
<td>AVS 207 Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 227 Aviation Careers</td>
<td>4</td>
</tr>
<tr>
<td>AVS 230 Airplane: Certified Flight Instructor Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 235 Airplane: Certified Flight Instructor Flight</td>
<td>2</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>AVS 231 Airplane CFI Introduction</td>
<td>(1)</td>
</tr>
<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>AVS 232 Airplane CFI Test Prep</td>
<td>(1)</td>
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</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AVS 207 Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 241 Airplane: CFI Ground/Flight</td>
<td>1</td>
</tr>
<tr>
<td>AVS 242 Airplane: MEI Ground/Flight</td>
<td>1</td>
</tr>
<tr>
<td>AVS 267 Economics of Flight Operations</td>
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</tr>
<tr>
<td>General Education</td>
<td>4</td>
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</table>

**Seventh Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 237 Aviation Law and Regulations</td>
<td>4</td>
</tr>
<tr>
<td>AVS 255 Airplane: Pilot Performance</td>
<td>1</td>
</tr>
<tr>
<td>Aviation Science Program Electives</td>
<td>2</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education*

**AVIATION SCIENCE - AIRPLANE AAS DEGREE**

**Aviation Science - Airplane Degree Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS</td>
<td>62</td>
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<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>Aviation Science Program Electives</td>
<td>8</td>
</tr>
<tr>
<td>GS</td>
<td>4</td>
</tr>
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<td>WR</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>

**COURSE OF STUDY: WITHOUT FLIGHT INSTRUCTOR OPTION**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td><strong>Flight Prep Lab Level I</strong></td>
<td>1</td>
</tr>
<tr>
<td>AVS 107</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVS 120</td>
<td>Airplane: Private Pilot Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 125</td>
<td>Airplane: Private Pilot Flight</td>
<td>4</td>
</tr>
<tr>
<td>AVS 127</td>
<td>Introduction to Aviation</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

| **Second Term** | **Flight Prep Lab Level I** | 1       |
| AVS 107 |                             |
| AVS 130 | Instrument Ground School   | 4       |
| AVS 135 | Airplane: Instrument Flight | 3       |
| AVS 137 | Applied Aerodynamics       | 4       |
# PROGRAMS & DISCIPLINES

## PORTLAND COMMUNITY COLLEGE  ■  2012-2013

### PROGRAMS & DISCIPLINES

#### Third Term
- **AVS 107** Flight Prep Lab Level I  
- **AVS 140** Airplane: Commercial Pilot Ground  
- **AVS 145** Introduction to Commercial Airplane  
- **AVS 157** Aircraft Systems and Structures I: Airframe  

#### Fourth Term
- **AVS 207** Flight Prep Lab Level II  
- **AVS 225** Airplane: Commercial Flight  
- **GS 109** Meteorology*  
- **General Education**  

#### Fifth Term
- **AVS 167** Aircraft Systems: Powerplant  
- **AVS 207** Flight Prep Level II  
- **AVS 227** Aviation Careers  
- **AVS 275** Airplane: Professional Pilot  

#### Sixth Term
- **AVS 267** Economics of Flight Operations  
- **General Education**  
- **Aviation Science Program Electives**  

#### Seventh Term
- **AVS 207** Flight Prep Lab Level II  
- **AVS 237** Aviation Law and Regulations  
- **AVS 255** Airplane: Pilot Performance  
- **General Education**  

*Could be used as General Education

### AVIATION SCIENCE - HELICOPTER AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

#### Aviation Science - Helicopter Degree Credit Summary

- **AVS** 62  
- **Aviation Science Program Electives** 12  
- **Remaining General Education** 8  
- **GS** 4  
- **PHY** 4  

**Credit Total 90**

### COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

#### First Term
- **AVS 107** Flight Prep Level I  
- **AVS 110** Helicopter: Private Pilot Ground  
- **AVS 115** Helicopter: Private Pilot Flight  
- **AVS 127** Introduction to Aviation  
- **General Education**  

#### Second Term
- **AVS 107** Flight Prep Level I  
- **AVS 137** Applied Aerodynamics  
- **AVS 150** Helicopter: Commercial Ground  
- **AVS 156** Helicopter: Introduction to Commercial Flight  
- **GS 109** Meteorology*  

#### Third Term
- **AVS 130** Instrument Ground School  
- **AVS 157** Aircraft Systems and Structures I: Airframe  
- **AVS 207** Flight Prep Level II  
- **AVS 216** Helicopter: Commercial Flight  
- **PHY 101** Fundamentals of Physics I*  
- **PHY 201** General Physics*  

#### Fourth Term
- **AVS 167** Aircraft Systems: Powerplant  
- **AVS 207** Flight Prep Level II  
- **AVS 227** Aviation Careers  
- **AVS 260** Helicopter: CFI Ground  
- **AVS 265** Helicopter: CFI Flight  

#### Fifth Term
- **AVS 237** Aviation Law and Regulations  
- **Aviation Science Program Electives**  
- **General Education**  

*Could be used as General Education

### Aviation Science Program Electives

- **BA 101** Introduction to Business  
- **BA 206** Management Fundamentals  
- **BA 211** Principles of Accounting I  
- **CAS 111D** Beginning Web Site Creation: Dreamweaver  
- **CAS 133** Basic Computer Skills/Microsoft Office  
- **CAS 170** Beginning Excel  
- **CAS 171** Intermediate Excel  
- **CAS 216** Beginning Word  
- **CAS 217** Intermediate Word  
- **CG 100A** College Survival and Success  
- **CG 100B** College Survival and Success  
- **CG 100C** College Survival and Success  
- **CG 105** Scholarships: $$ for College  
- **CG 111A** Study Skills for College Learning  
- **CG 111B** Study Skills for College Learning  
- **CG 111C** Study Skills for College Learning  
- **CG 114** Financial Survival for College Students  
- **CG 145** Stress Management  
- **CIS 120** Computer Concepts I*  
- **CIS 121** Computer Concepts II*  
- **EC 200** Introduction to Economics*  
- **EC 201** Principles of Economics: Microeconomics*  
- **EC 202** Principles of Economics: Macroeconomics*  
- **EMS 100** Intro to Emergency Medical Services  
- **EMS 105** EMT Basic Part I  
- **EMS 106** EMT Basic Part II  
- **FN 110** Personal Nutrition  
- **G 207** Geology of the Northwest  
- **HPE 295** Health and Fitness for Life  
- **MSD 101** Principles of Management and Supervision  
- **MSD 105** Interpersonal Communication  
- **MSD 110** Gender Conflict Resolution  
- **MSD 115** Improving Work Relations  
- **MSD 117** Customer Relations
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 111</td>
<td>College Algebra*</td>
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</tr>
<tr>
<td>MTH 112</td>
<td>Elementary Functions*</td>
<td>5</td>
</tr>
<tr>
<td>MTH 241</td>
<td>Calculus for Management, Life, and Social Science*</td>
<td>4</td>
</tr>
<tr>
<td>MTH 243</td>
<td>Statistics I*</td>
<td>5</td>
</tr>
<tr>
<td>PHY 101</td>
<td>Fundamentals of Physics I*</td>
<td>4</td>
</tr>
<tr>
<td>PHY 201</td>
<td>General Physics*</td>
<td>4</td>
</tr>
<tr>
<td>PSY 201A</td>
<td>Introduction to Psychology-Part 1*</td>
<td>4</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations*</td>
<td>4</td>
</tr>
<tr>
<td>WR 117</td>
<td>Introduction to Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR 122</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I</td>
<td>4</td>
</tr>
<tr>
<td>PE</td>
<td>Any 100 or 200 level course (up to 3 Credits)</td>
<td>1</td>
</tr>
</tbody>
</table>

Foreign Language Any 100 or 200 level course* varies

BIOLOGY

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
971-722-7257

Sylvania Campus
Health Technology (HT), Room 305
971-722-4225

www.pcc.edu/programs/biology/

DESCRIPTION

Biology course offerings include classes for those interested in the study of life at all levels, from cells to ecosystems. Both introductory and in-depth courses are offered in general biology, cell biology, botany, microbiology, anatomy and physiology and the biology of specific habitats such as marine and forest ecosystems. PCC offers biology courses for both science majors and non-majors.

Work in the sciences is an important part of many college programs. Courses at PCC are organized to present basic principles and to provide a coordinated overview of the sciences as they relate to living organisms. See the Course Description (BI) section of this catalog for individual Biology courses and course prerequisites.

BIOLOGY AND MANAGEMENT OF ZOO ANIMALS

Rock Creek Campus
Building 7, Room 202
971-722-7688

www.pcc.edu/zoo

CAREER AND PROGRAM DESCRIPTION

The Zoo Animal Management professional is knowledgeable and skilled in providing high quality daily care of captive populations of exotic animals, managing sustainable populations, maintaining animal exhibits/enclosures, providing effective interpretive programming to visitors, and participating in conservation programs. Graduates are prepared to serve the zoological community in a variety of capacities, including: zookeeper/aquarist, animal trainer, zoo educator, animal presenter/outreach, wildlife rehabilitator, registrar and laboratory animal technician. Students have the opportunity to work closely with a wide diversity of animals at the Oregon Zoo and Oregon National Primate Research Center.

This is a seven term, full time program. All Biology and Management of Zoo Animal courses must be taken in sequential order in the course of study below. All Biology and Management of Zoo Animals courses must be completed with a C or better in order to qualify for continuation in the program.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Biology and Management of Zoo Animals

PREREQUISITES AND REQUIREMENTS

College placement tests are administered through assessment centers.

1. High school diploma, GED certificate, or equivalent required
2. Completion of WR 121 or higher with a C grade or better or previous degree
3. Completing MTH 65, or MTH 63 with a C or better, or passing a math class with a C or better for which MTH 65 or higher level math skills are a prerequisite, or passing the PCC competency exam for MTH 65
4. Completion of BI 112 Cell Biology for Health Occupations
5. Completion of CH 100 Fundamentals of Chemistry or CH 104 Allied Health Chemistry
6. Completion of a minimum of one additional course from the General Education/Discipline Studies list
7. Documentation of computer literacy through CAS 133 Basic Computer Skills, equivalent coursework or experience.
8. A minimum of 20 documented hours of direct animal husbandry experience.

All prerequisite coursework and experience must be complete by the end of winter term prior to the early spring application deadline. Courses planned for spring term will not be considered. Pass/No Pass evaluation is not acceptable in the prerequisite courses.
The Biology and Management of Zoo Animals Program is a limited entry program with restricted enrollment. The admissions process is competitive and based on a point system including an interview process for those with initial high scores. Applicants with the highest final point totals will be accepted. Completing admission requirements and applying to the program does not guarantee admission. For our current advising guide and applications, when available, please visit the Biology of Management of Zoo Animals website.

Candidates will be notified of their admissions status by the beginning of June. Only students who have been officially accepted into the program or those who have prior department approval may enroll in classes.

Admitted students will be required to provide proof of recent negative TB testing and tetanus vaccination and are required to pass a criminal background check, as well as meet all dress code and physical requirements, and follow all rules, regulations, and safety requirements of clinical sites for working in an animal husbandry environment at a public facility. Students who have a health, physical or psychological problem which may be affected by these requirements should contact the department prior to entering the program.

STUDENT DISABILITY INFORMATION
Zoo Animal Management is a physically and mentally challenging occupation. Education related to this field is designed to prepare zoo professionals for these challenges. Students in this program must be able to meet all established essential academic and cooperative education requirements to successfully complete the program. Persons with questions concerning qualifications are encouraged to contact the department for individual consultation prior to formal application.

Applicants with disabilities are encouraged to contact Disability Services 971-722-4341. To be eligible for a reasonable accommodation, applicants must provide clear documentation of their disability. Disability Services is responsible for determining if reasonable accommodations can be identified and ensuring that accommodations are provided to PCC students. Disability Services are confidential and are separate from the Biology and Management of Zoo Animals and college application processes. Early contact with Disability Services will ensure that accommodations can be made available when students begin the program.

BIOLGY AND MANAGEMENT OF ZOO ANIMALS AAS DEGREE
Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Biology and Management of Zoo Animals Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
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<td>BMZA</td>
<td>85</td>
</tr>
<tr>
<td>General Education</td>
<td>12</td>
</tr>
<tr>
<td>SP</td>
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<td>CG</td>
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<tr>
<td>PE</td>
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</tbody>
</table>

Credit Total 103

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

To be completed prior to taking any BMZA courses

General Education 8

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMZA 100</td>
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<td>BMZA 101</td>
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<td>BMZA 110</td>
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<tr>
<td>PE 181D</td>
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</tr>
<tr>
<td>SP 111</td>
<td>4</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMZA 150</td>
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<td>BMZA 201</td>
<td>4</td>
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<tr>
<td>BMZA 280A</td>
<td>5</td>
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</tbody>
</table>

Third Term

<table>
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<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>BMZA 105</td>
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<td>BMZA 202</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 280A</td>
<td>4</td>
</tr>
</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMZA 106</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 203</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 231</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 240</td>
<td>2</td>
</tr>
<tr>
<td>BMZA 280A</td>
<td>4</td>
</tr>
</tbody>
</table>

Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMZA 220</td>
<td>4</td>
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<td>BMZA 232</td>
<td>4</td>
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<td>BMZA 250</td>
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<tr>
<td>BMZA 270</td>
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<tr>
<td>CG 209</td>
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</table>

Seventh Term

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BMZA 260</td>
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<tr>
<td>BMZA 265</td>
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<tr>
<td>BMZA 255</td>
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</tr>
<tr>
<td>BMZA 280B</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

BIOMEDICAL ENGINEERING TECHNOLOGY

SEE ELECTRONIC ENGINEERING TECHNOLOGY
BIO SCI ENCE TECHNOLOGY

Rock Creek Campus
Science and Technology, Building 7/202
971-722-7257 or 971-722-7282
www.pcc.edu/bio

CAREER AND PROGRAM DESCRIPTION

Bioscience Technology refers to the research, development, and manufacturing of products which use the processes, products or principles of living organisms to solve problems. The applications of bioscience range from developing and manufacturing better ways to diagnose and treat disease, to improving the production of plant crops, and even using microorganisms to clean up toxic wastes. The field is dynamic, employing applications and innovations that in many cases cut across traditional disciplines. Skilled technicians with broad-based laboratory training find employment in a variety of settings, working with scientists at all levels in research, development, manufacturing, testing, and quality control and assurance. Technicians are needed in both large and small companies, research institutions, at local and state agencies, in private service laboratories and in some related industries.

Course work in the Bioscience program involves four distinct elements. Basic science courses provide the background information so that technical elements can be more completely understood. The foundation course work provides a broad base of technical knowledge that prepares individuals for entry-level positions in a variety of Bioscience companies, and includes emphasis on working in a regulated environment, as well as developing skill in technical communication and job readiness. The core of these foundation courses make up the Bioscience Technician Certificate. The advanced technical courses develop more specific skill sets, and provide for development of the fundamental skills in this more advanced context. Students may choose some electives from outside of the BIT program, in order to increase the breadth of training or focus on a specific sector of the bioscience industry. Once the formal course work has been completed, the work experience component will ensure that students have a chance to put their skills and knowledge into a working context. Certificate students must receive a C or better in all required bioscience courses.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Bioscience Technology

Less than One-Year: Career Pathway Certificate
Bioscience Technician

PREREQUISITES AND REQUIREMENTS

AAS Bioscience Technology:
Placement into WR 121 and MTH 95
Bioscience Technician Certificate:
Placement into WR 115, RD 115 and MTH 95
The Bioscience Technology program is a restricted entry program with limited enrollment. Contact the department for instructions. Students must receive a C or higher in all required bioscience courses in order to earn the certificate.

BIO SCI ENCE TECHNOLOGY AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Bioscience Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Credit Total</th>
<th>92</th>
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</thead>
<tbody>
<tr>
<td>BI 112</td>
<td>Cell Biology for Health Occupations *</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>BI 211</td>
<td>Principles of Biology *</td>
</tr>
<tr>
<td>BIT 102</td>
<td>Current Topics in Bioscience Technology</td>
</tr>
<tr>
<td>BIT 105</td>
<td>Bioscience Workplace Safety 6</td>
</tr>
<tr>
<td>BIT 107</td>
<td>Bioscience Lab Math 2</td>
</tr>
<tr>
<td>BIT 109</td>
<td>Basic Lab Techniques and Instruments 2</td>
</tr>
<tr>
<td>BIT 125</td>
<td>Quality Systems in Bioscience Technology</td>
</tr>
<tr>
<td>BIT 126</td>
<td>Applied Quality Practices</td>
</tr>
<tr>
<td>BIT 181</td>
<td>Exploring Bioscience</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
</tr>
<tr>
<td>CH 104</td>
<td>Allied Health Chemistry I *</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>CH 221</td>
<td>General Chemistry I *</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
<tr>
<td>BIT 280A</td>
<td>Work Experience</td>
</tr>
<tr>
<td>BIT 280B</td>
<td>Work Experience Seminar **</td>
</tr>
<tr>
<td>Bioscience Degree Electives</td>
<td>30</td>
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<tr>
<td>Basic Science Electives</td>
<td>9</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
</tbody>
</table>

**Could be used as General Education

** The Work Experience component is taken after all other coursework has been completed.

1 MTH 95 is not required for the degree, but a Math 95 competency is an exit requirement. Placement into MTH 111 satisfies the MTH 95 competency. It is recommended that students take MTH 111 because it is useful for other Science and Physics courses.

2 BIT 110 (or BIT 110A and BIT 110B), can be substituted for BIT 105, 107 and 109

Basic Science Electives

| BI 211 | Principles of Biology * | 5 |
| BI 212 | Principles of Biology * | 5 |
| BI 213 | Principles of Biology * | 5 |
| BI 234 | Microbiology * | 5 |
| CH 211 | Introduction to Biochemistry * | 4 |
| CH 221 | General Chemistry I * | 5 |
| CH 222 | General Chemistry II * | 5 |
| CH 223 | General Chemistry III * | 5 |
| MTH 243 | Statistics I * | 5 |
| PHY 201 | General Physics * | 4 |
| PHY 202 | General Physics * | 4 |
| PHY 203 | General Physics * | 4 |
PORTLAND COMMUNITY COLLEGE  ■  2012-2013

PROGRAMS & DISCIPLINES

Note: Students who are interested in transferring to PSU for a BS degree in Biology will need to complete BI 211, 212, 213 and CH 221, 222 and 223 in order to be eligible for placement in upper-division Biology and Chemistry courses at PSU.

Bioscience Degree Electives- (20 must be BIT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIT 201</td>
<td>Immunochemical Methods</td>
<td>5</td>
</tr>
<tr>
<td>BIT 203</td>
<td>Recombinant DNA</td>
<td>5</td>
</tr>
<tr>
<td>BIT 205</td>
<td>Bioseparations</td>
<td></td>
</tr>
<tr>
<td>BIT 207</td>
<td>Cell Culture</td>
<td>5</td>
</tr>
<tr>
<td>BIT 215</td>
<td>Protein Purification</td>
<td>5</td>
</tr>
<tr>
<td>BIT 223</td>
<td>Advanced DNA Techniques</td>
<td>5</td>
</tr>
<tr>
<td>MT 111</td>
<td>Elec circuits and Devices I</td>
<td>4</td>
</tr>
<tr>
<td>MT 112</td>
<td>Elec circuits and Devices II</td>
<td>4</td>
</tr>
<tr>
<td>MT 113</td>
<td>Elec circuits and Devices III</td>
<td>4</td>
</tr>
<tr>
<td>MT 121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MT 122</td>
<td>Digital Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MT 222</td>
<td>Quality Control Methods in Manufacturing</td>
<td>3</td>
</tr>
</tbody>
</table>

BIOSCIENCE TECHNICIAN:
CAREER PATHWAY CERTIFICATE

Minimum 19 credits. Students must also meet certificate requirements. The Biotechnician certificate is a Career Pathway. All courses are contained in the Bioscience Technology AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIT 102</td>
<td>Current Topics in Bioscience Technology</td>
<td>2</td>
</tr>
<tr>
<td>BIT 105</td>
<td>Safety in the Bioscience Workplace</td>
<td>2</td>
</tr>
<tr>
<td>BIT 107</td>
<td>Bioscience Lab Math</td>
<td>2</td>
</tr>
<tr>
<td>BIT 109</td>
<td>Basic Laboratory Techniques and Instruments</td>
<td>5</td>
</tr>
<tr>
<td>BIT 125</td>
<td>Quality Systems in Bioscience Technology</td>
<td>2</td>
</tr>
<tr>
<td>BIT 126</td>
<td>Applied Quality Practices</td>
<td>3</td>
</tr>
<tr>
<td>BIT 181</td>
<td>Exploring Bioscience</td>
<td>3</td>
</tr>
</tbody>
</table>

BUILDING CONSTRUCTION TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
971-722-7255—General Information
971-722-7406—Design/Build Remodeling
971-722-7403 or 971-722-7328—Building Construction
971-722-7475—Construction Management

www.pcc.edu/bct

CAREER AND PROGRAM DESCRIPTION

Career possibilities exist for those going into business for themselves or seeking employment in the construction industry. PCC offers associate degrees and a certificate in several construction industry specialties. This program is designed to help students develop the technical qualifications and life skills needed to enter the construction industry, as well as to help those currently in the construction trades upgrade and learn new skills.

Building Construction Technology AAS Degree: This degree is designed to help students learn the skills a carpenter needs to build a house. Coursework includes hands-on instruction in the BCT shop, or at the BCT work site, in Tool Safety, Residential Concrete, Floor/Wall/Roof Framing, Exterior/Interior Finish, Cabi-

netmaking, and Remodeling. Classroom instruction consists of lectures and exercises that will teach skills in Residential Printreading, Materials and Methods, Building Codes, Estimating, Construction Math, Drafting, and Sustainable Building.

Graduates might work in the construction field as framers, carpenters, remodelers, site supervisors, concrete workers, siding installers, roofers, trim carpenters, etc. After gaining job site experience, graduates might even start their own construction companies. For specific courses required to complete this degree, see the term by term list under “Building Construction Technology.” For students who plan to complete the degree in two years, fall term is the best time to begin, since most courses are only offered once each year. However, many students enter the program in winter, spring, or summer terms. Students who enter the program during these terms should see a BCT advisor during their first term for help in sequencing courses.

Design/Build Remodeling AAS Degree: This degree offers coursework in building construction and interior design with a focus on kitchen and bath remodeling and design. This degree is accredited by the National Kitchen and Bath Association (NKBA) and follows NKBA kitchen and planning guidelines. Upon graduation, students can take the Associate Kitchen and Bath Designer (AKBD) exam and after gaining additional experience take the Certified Kitchen and/or Bath exam to become a certified designer. A graduate might work as a kitchen and/or bath designer, remodeler, cabinet installer, project superintendent, project manager, estimator, or showroom and sales associate. College level reading and writing skills, basic math skills are required. Individual courses may have prerequisites which are included in the course description. A “C” or better grade is required in all course work in this program option. Pass/No Pass grades are not accepted. Students must complete the coursework requirements outlined in the PCC catalog under Associates of Applied Science Degree. Students desiring to use this degree as their NKBA education requirement for the AKBD exam must complete a 160 hour internship with a company engaged in the kitchen and bath industry, in addition to the classes listed below.

Construction Management AAS Degree: Our Construction Management (CM) program provides students with the technical and management skills and qualifications necessary to secure employment in a management capacity within the construction industry. Our curriculum prepares students for entry level management and supervisory positions in the residential and commercial fields of construction, offering classes in estimating, scheduling, construction law, safety, building systems, materials and methods of construction, blueprint reading, project management and more. CM graduates seek employment as project engineers, estimators, schedulers, project managers and field supervisors. Others become owner’s representatives, developers, and general and specialty contractors. Graduates who earn the AAS degree in Construction Management may transfer to Oregon Institute of Technology to pursue a Bachelor of Science in Operations Management. Also, a Bachelor’s of Applied Science in Technology and Management is offered to AAS CM degree holders by both OIT and Southern Oregon University (SOU). The SOU program is online. OIT offers courses at OIT’s Portland Metro area campus in Wilsonville.

51
DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
- Building Construction Technology
  - Design/Build Remodeling Option
  - Construction Management Option

Less than One-Year Certificate
- Building Construction Technology

BUILDING CONSTRUCTION TECHNOLOGY
AAS DEGREE

Minimum 93 credits. Students must also meet Associate Degree
Comprehensive Requirements and Associate of Applied Science
Requirements. Students must complete a total of sixteen credits
of General Education. Some courses specified within the program
may be used as General Education. Students should consult with
program advisors for course planning.

Building Construction Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BCT</td>
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<td>ARCH</td>
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<td>BCT Degree Electives</td>
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<td>SP</td>
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<tr>
<td>WR</td>
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Credit Total 93

COURSE OF STUDY

The coursework listed below is required. The following is an
example of a term-by-term breakdown.

First Term

<table>
<thead>
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<th>Course</th>
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<td>BCT 106</td>
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Second Term

<table>
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<td>ARCH 110</td>
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<td>ARCH 132</td>
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<td>BCT 101</td>
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<td>BCT 127</td>
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Third Term

<table>
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<td>BCT 122</td>
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Fourth Term

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<td>BCT Degree Electives</td>
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<tr>
<td>BCT 223</td>
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<tr>
<td>SP 215</td>
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<tr>
<td>Small Group Communication:</td>
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<tr>
<td>Process and Theory*</td>
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Fifth Term

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<td>BCT 219</td>
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Sixth Term

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<td>BCT 206</td>
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<td>BCT 211</td>
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<td>WR 227</td>
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*Could be used as General Education

Building Construction Technology Degree Electives

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<td>BCT 105</td>
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<td>BCT 108</td>
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<td>BCT 134</td>
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<td>BCT 280A</td>
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<tr>
<td>BCT 280C</td>
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<td>CE: Building Construction</td>
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<tr>
<td>CE: BCT Design/Build Remodeling</td>
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</tbody>
</table>
### DESIGN/BUILD REMODELING AAS DEGREE

Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Course of Study**
The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>BCT 100</td>
<td>Graphic Communication for Designers</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 102</td>
<td>Residential Printreading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 103</td>
<td>Residential Materials and Methods</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 104</td>
<td>Construction Mathematics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 106</td>
<td>Hand Tool/Power Tool Use and Safety</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SP 215</td>
<td>Small Group Communication: Process and Theory*</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>BCT 120</td>
<td>Floor Framing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 121</td>
<td>Wall Framing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 122</td>
<td>Roof Framing I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 123</td>
<td>Roof Framing II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 209</td>
<td>Vectorworks for Contractors</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ID 133</td>
<td>Space Planning and Design</td>
<td>3</td>
</tr>
<tr>
<td>Third Term</td>
<td>BCT 128</td>
<td>Exterior Finish</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>BCT 129</td>
<td>Mechanical Planning for Kitchens and Baths</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BCT 202D</td>
<td>Business Principles for Design/Building</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 229</td>
<td>Introduction to Kitchens and Baths</td>
<td>2</td>
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<tr>
<td></td>
<td>General Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Term</td>
<td>BCT 203</td>
<td>Interior Finish</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>BCT 206</td>
<td>Sustainable Construction Practices</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 219</td>
<td>Cabinetmaking I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>ID 238</td>
<td>Advanced Kitchen and Bath Planning</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fifth Term</td>
<td>BCT 204B</td>
<td>Construction Estimating-Residential</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 211</td>
<td>Remodeling</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>BCT 244</td>
<td>Kitchen and Bath Cabinet Installation</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Could be used as General Education

**Credit Total 103**

### CONSTRUCTION MANAGEMENT AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Course of Study**
The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>BCT 100</td>
<td>Overview of the Construction Industry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 102</td>
<td>Residential Printreading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BCT 103</td>
<td>Residential Materials and Methods</td>
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<tr>
<td></td>
<td>BCT 104</td>
<td>Construction Mathematics</td>
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<td></td>
<td>BCT 202C</td>
<td>Business Principles for Construction</td>
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</tr>
<tr>
<td></td>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
<td>2</td>
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<td>ARCH 126</td>
<td>Introduction to AutoCAD</td>
<td>3</td>
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<td></td>
<td>ARCH 132</td>
<td>Commercial Building Codes</td>
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<td>BCT 134</td>
<td>Construction Scheduling</td>
<td>3</td>
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<td></td>
<td>BCT 202C</td>
<td>Business Principles for Construction</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ARCH 133</td>
<td>Commercial Building Codes</td>
<td>2</td>
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<td></td>
<td>ARCH 136</td>
<td>Intermediate AutoCAD</td>
<td>3</td>
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<td>BCT 133</td>
<td>Commercial Materials and Methods</td>
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<td></td>
<td>BCT 221</td>
<td>Construction Law for the Contractor</td>
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<td></td>
<td>SP 215</td>
<td>Small Group Communication: Process and Theory*</td>
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<tr>
<td>Fourth Term</td>
<td>BCT 150</td>
<td>Mechanical, Electrical and Plumbing</td>
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<td></td>
<td>BCT 213</td>
<td>Commercial Printreading</td>
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<td></td>
<td>CAS 170</td>
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<td>Technical and Professional Writing I</td>
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<td>Principles of Construction Surveying</td>
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<td></td>
<td>BCT 204C</td>
<td>Construction Estimating Commercial</td>
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<td>BCT 206</td>
<td>Sustainable Construction Practices</td>
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<td></td>
<td>BCT 222</td>
<td>Engineering for Constructors</td>
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<td>Sixth Term</td>
<td>BCT 130</td>
<td>Construction Safety</td>
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<td>BCT 207</td>
<td>Construction Job Costing</td>
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<td></td>
<td>BCT 214</td>
<td>Advanced Construction Estimating</td>
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<tr>
<td></td>
<td>BCT 225</td>
<td>Construction Project Management</td>
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</table>

**Credit Total 94**
Seventh Term

BCT 280A  CE: Building Construction 3

*Could be used as General Education
1Class may be challenged by petitioning for course by examination.
2 ARCH 162 Blueprint Reading Part 2 may be substituted for BCT 213
3 CAS 171 Intermediate Excel may be substituted for CAS 170
4 ARCH 122 Structural Systems 2 may be substituted for BCT 222
5 Credits for this class may vary from one to six depending on the nature and duration of the cooperative experience. This class may be taken one or more times until the required number of credits is fulfilled. See advisor for details.

BUILDING CONSTRUCTION TECHNOLOGY
LESS THAN ONE-YEAR CERTIFICATE

Minimum 37 credits. Students must meet all certificate requirements. The Building Construction Technology Certificate is a related certificate. All courses are contained in the Building Construction Technology AAS Degree.

Building Construction Technology Certificate
Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BCT</td>
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<tr>
<td>ARCH</td>
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</tbody>
</table>

Credit Total 37

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BCT 102</td>
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<tr>
<td>BCT 103</td>
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<tr>
<td>BCT 104</td>
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<td>BCT 106</td>
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Second Term

<table>
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<tr>
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<tr>
<td>ARCH 110</td>
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<tr>
<td>ARCH 132</td>
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<tr>
<td>BCT 101</td>
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<td>BCT 127</td>
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Third Term

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<td>BCT 121</td>
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<td>BCT 122</td>
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<td>BCT 123</td>
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</table>

BUILDING INSPECTION TECHNOLOGY

Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4163

www.pcc.edu/bit

The Residential Structural and Mechanical Inspection and Plans Examination certificate has been suspended. For more information or availability of individual courses please contact the department at 971-722-4160 or visit www.pcc.edu/bit.

BUSINESS ADMINISTRATION

Cascade Campus
Technology Education Building (TEB), Room 210
971-722-5317

Rock Creek Campus
Building 3, Room 201
971-722-7235

Sylvania Campus
TCB Room 312
971-722-4292

Extended Learning Campus
Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

www.pcc.edu/programs/business

CAREER AND PROGRAM DESCRIPTION

Four associate of applied science degrees in business administration are offered. They are: Accounting, Management, Marketing and Retail Management. These two-year degrees emphasize skills to be used on the job upon completion of the degree requirements and are not designed for students intending to transfer to four-year schools. If transferability of courses is a concern, students should consult with the institution of their choice regarding transfer possibilities.

Due to the rapid changes in employment opportunities, technological advances and certifying agency regulations, Business programs are subject to change. Students must meet PCC’s writing and math competencies prior to graduation. See Comprehensive Degree Requirements in this catalog.

The Retail Management Degree is supported by local trade associations in the grocery retail business. The degree is designed for those working in the industry that desire to enhance their current skills and to better prepare for career advancement in this industry. Students seeking employment in the retail sector will also find this degree helpful. Students will take classes in business communication, marketing, management and accounting. The Retail Management Certificate is approved by the Western Association of Food Chains (WAFC) and supported by several major retailers. See this link for a list of major retail members: www.wafc.com/links/groceryretailers.html.

College entry-level competencies in English and in computational skills must be met. Placement tests are available for writing and math. Additional requirements for individual business courses are listed in the Course Description section of this catalog.

This program and individual courses are available at several PCC locations.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree

Accounting
Marketing
Management
Retail Management
### ACCOUNTING AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Accounting Degree Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 101</td>
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<td>BA 111</td>
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<td>BA 131</td>
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<td>BA 177</td>
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<td>BA 205</td>
<td>4</td>
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<td>BA 206</td>
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<td>BA 211</td>
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<td>BA 212</td>
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<tr>
<td>BA 213</td>
<td>4</td>
</tr>
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<td>BA 222</td>
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<td>BA 226</td>
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<td>BA 228</td>
<td>3</td>
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<tr>
<td>BA 240</td>
<td>4</td>
</tr>
<tr>
<td>or BA 242</td>
<td>3</td>
</tr>
<tr>
<td>BA 256</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 171</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>3</td>
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<tr>
<td>or CAS 217</td>
<td>3</td>
</tr>
<tr>
<td>EC 201</td>
<td>4</td>
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<tr>
<td>EC 202</td>
<td>4</td>
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<tr>
<td>OS 131</td>
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*Credit Total 92*

**Accounting Degree Courses**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
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<tr>
<td>BA 111 Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 131 Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 177 Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 205 Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 206 Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA 211 Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA 212 Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BA 213 Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 222 Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 226 Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 228 Computer Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>BA 240 Nonprofit Financial Management and Accounting</td>
<td>4</td>
</tr>
<tr>
<td>or BA 242 Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA 256 Income Tax</td>
<td>3</td>
</tr>
<tr>
<td>BA 285 Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170 Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 171 Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216 Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 217 Intermediate Word</td>
<td>3</td>
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<tr>
<td>EC 201 Principles of Economics: Microeconomics</td>
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<tr>
<td>EC 202 Principles of Economics: Macroeconomics</td>
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<td>OS 131 10-key on Calculators</td>
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</table>

*Credit Total 92*

### ACCOUNTING CLERK ONE-YEAR CERTIFICATE

Minimum 48 credits. Students must meet certificate requirements.

**Accounting Clerk Certificate Credit Summary**

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BA 101 Introduction to Business</td>
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<td>BA 111 Introduction to Accounting</td>
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<td>BA 177 Payroll Accounting</td>
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<tr>
<td>BA 205 Solving Communication Problems with Technology</td>
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<tr>
<td>BA 206 Management Fundamentals</td>
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<td>BA 211 Principles of Accounting I</td>
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</tr>
<tr>
<td>BA 212 Principles of Accounting II</td>
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<tr>
<td>BA 228 Computer Accounting Applications</td>
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</tr>
<tr>
<td>BA 285 Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 121 Beginning Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 122 Keyboarding for Speed and Accuracy</td>
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</tr>
<tr>
<td>OS 131 10-key on Calculators</td>
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</tr>
<tr>
<td>WR 201 English Composition</td>
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</tr>
<tr>
<td>Accounting Clerk EC Electives</td>
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</tr>
<tr>
<td>Accounting Clerk CAS Electives</td>
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<tr>
<td>Business Program Electives</td>
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*Credit Total 48*

**Accounting Clerk Certificate Courses**

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<td>BA 111 Introduction to Accounting</td>
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<td>BA 131 Computers in Business</td>
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<td>BA 177 Payroll Accounting</td>
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<td>BA 205 Solving Communication Problems with Technology</td>
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<td>BA 206 Management Fundamentals</td>
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<td>BA 211 Principles of Accounting I</td>
<td>3</td>
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<td>BA 212 Principles of Accounting II</td>
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<td>BA 228 Computer Accounting Applications</td>
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<td>CAS 121 Beginning Keyboarding</td>
<td>3</td>
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<td>or CAS 122 Keyboarding for Speed and Accuracy</td>
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<tr>
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<tr>
<td>WR 121 English Composition</td>
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<tr>
<td>Accounting Clerk Economic Electives</td>
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**Accounting Clerk Computer Applications Electives**

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<td>CAS 171 Intermediate Excel</td>
<td>3</td>
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<td>CAS 216 Beginning Word</td>
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**Accounting Clerk Economics Electives**

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<th>Credits</th>
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<tr>
<td>EC 201 Principles of Economics: Microeconomics</td>
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<tr>
<td>EC 202 Principles of Economics: Macroeconomics</td>
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</table>
ACCELERATED ACCOUNTING
LESS THAN ONE-YEAR CERTIFICATE

Minimum 29 credits. Students must all meet certificate requirements.

**Accelerated Accounting Certificate Credit Summary**

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BA 111</td>
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<td>BA 177</td>
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<td>BA 201</td>
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<td>BA 206</td>
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<td>BA 209</td>
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<td>OS 131</td>
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<td>WR 90</td>
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<td>WR 115</td>
<td>4</td>
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<tr>
<td>WR 121</td>
<td>4</td>
</tr>
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<td>Business Program Electives</td>
<td>3</td>
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<tr>
<td>OS 131</td>
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<td>WR 115</td>
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**Accelerated Accounting Certificate Courses**

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<td>BA 177</td>
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<td>BA 201</td>
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<td>BA 206</td>
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<td>BA 209</td>
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<tr>
<td>OS 131</td>
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<td>WR 90</td>
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<td>WR 121</td>
<td>4</td>
</tr>
<tr>
<td>Business Program Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students who have completed high school bookkeeping or have had work experience with full-cycle bookkeeping responsibilities should substitute an approved business elective and start the accounting series BA 211 in the second term.

2 Students who can touch type more than 40 words per minute should substitute an approved business elective.

3 Students working toward the Accounting Clerk Certificate must complete business electives selected from list of Business Program Electives which appears at the end of the program description in this section.

4 Students working toward the Accounting Clerk Certificate must complete business electives selected from list of Business Program Electives which appears at the end of the program description in this section.

ENTRY-LEVEL ACCOUNTING CLERK:
CAREER PATHWAY CERTIFICATE

Minimum 14 credits. Students must also meet certificate requirements. The Entry-Level Accounting Clerk Certificate is a Career Pathway. All courses are contained in the Accounting AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>4</td>
</tr>
<tr>
<td>BA 111</td>
<td>3</td>
</tr>
<tr>
<td>BA 131</td>
<td>4</td>
</tr>
<tr>
<td>BA 228</td>
<td>3</td>
</tr>
</tbody>
</table>

MANAGEMENT AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Management Degree Credit Summary**

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tbody>
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**Management Degree Courses**

<table>
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<th>Credits</th>
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<tbody>
<tr>
<td>BA 101</td>
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<td>BA 131</td>
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*Could be used as General Education
### Management Degree Electives

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<tr>
<td>BA 177</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
<td>4</td>
</tr>
<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 218</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BA 242</td>
<td>Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 280A</td>
<td>CE: Business Experience</td>
<td>3</td>
</tr>
<tr>
<td>BA 280B</td>
<td>CE: Business Experience-Seminar</td>
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</table>

### Management Support Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 109</td>
<td>Beginning PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 140</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 231</td>
<td>Publisher</td>
<td>3</td>
</tr>
<tr>
<td>OS 240</td>
<td>Filing and Records Management</td>
<td>4</td>
</tr>
</tbody>
</table>

1 Students who have completed high school bookkeeping or have had work experience with full-cycle bookkeeping responsibilities should substitute a Business elective and start the accounting series with BA 211 in the second term. Business Program electives follow at the end of the Business Administration section.

### Marketing AAS Degree

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

### Marketing Degree Credit Summary

<table>
<thead>
<tr>
<th>Program</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA</td>
<td>47</td>
</tr>
<tr>
<td>CAS</td>
<td>9</td>
</tr>
<tr>
<td>EC</td>
<td>4</td>
</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Co-op Ed or Marketing CAS Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Total 92

### Marketing Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 234</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 235</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations - Organizations</td>
<td>3</td>
</tr>
<tr>
<td>BA 280A</td>
<td>CE: Business Experience</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>BA 280B</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>Marketing CAS Elective</td>
<td>3</td>
</tr>
<tr>
<td>CAS 121</td>
<td>Beginning Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>EC 200</td>
<td>Introduction to Economics</td>
<td>4</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking*</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Business Program Electives</td>
<td>13</td>
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<tr>
<td>Remaining General Education</td>
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</tbody>
</table>

*Could be used as General Education

### Marketing CAS Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111F</td>
<td>Beginning Website Creation: FrontPage</td>
<td>3</td>
</tr>
<tr>
<td>CAS 140</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 231</td>
<td>Publisher</td>
<td>3</td>
</tr>
</tbody>
</table>

1 Students working toward the marketing degree program must complete Business electives selected from list of Business Programs Electives which appears at the end of the program descriptions in this section.

### Marketing One-Year Certificate

Minimum 45 credits. Students must also meet certificate requirements. The Marketing Certificate is a related certificate. All courses are contained in the Marketing AAS Degree.

### Marketing Certificate Credit Summary

<table>
<thead>
<tr>
<th>Program</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA</td>
<td>31</td>
</tr>
<tr>
<td>CAS</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Total 45

### Marketing Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 236</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
<td>3</td>
</tr>
<tr>
<td>BA 280A</td>
<td>CE: Business Experience</td>
<td>3</td>
</tr>
<tr>
<td>BA 280B</td>
<td>CE: Business Experience - Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CAS 121A</td>
<td>Beginning Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>Business Program Electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

1 Students who have completed high school bookkeeping or have had work experience with full-cycle bookkeeping responsibilities should substitute a Business elective.

2 Students who can touch type should substitute an approved Business elective.

3 Students working toward the Marketing Certificate must complete business electives selected from list of Business Program Electives which appears at the end of the program description in this section.
RETAIL MANAGEMENT AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Retail Management Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I*</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
</tr>
<tr>
<td>BA 212</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>BA 251</td>
<td>Office Management</td>
</tr>
<tr>
<td>BA 280A</td>
<td>CE: Business Experience</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics*</td>
</tr>
<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics*</td>
</tr>
<tr>
<td>HE 112</td>
<td>First Aid and Emergency Care</td>
</tr>
<tr>
<td>MTH 30</td>
<td>Business Math (or MTH 60 or higher)</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking*</td>
</tr>
<tr>
<td>SP 130</td>
<td>Business and Professional Speech Comm</td>
</tr>
<tr>
<td>SP 140</td>
<td>Introduction to Intercultural Communication*</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>Business Program Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

*Could be used as General Education

1 Students that have not taken high school bookkeeping or have no work experience with full cycle bookkeeping should take BA 111 – Introduction to Accounting before enrolling in BA 211.

RETAIL SALES AND SERVICE: CAREER PATHWAY CERTIFICATE

Minimum 13 credits. Students must also meet certificate requirements. The Retail Sales and Service Certificate is a career pathway. All courses are contained in the Retail Management AAS Degree.

Retail Management Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resources Management</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations - Organizations</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking</td>
</tr>
</tbody>
</table>

Retail Management Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I*</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
</tr>
<tr>
<td>BA 212</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
</tr>
<tr>
<td>BA 251</td>
<td>Office Management</td>
</tr>
<tr>
<td>BA 280A</td>
<td>CE: Business Experience</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics*</td>
</tr>
<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics*</td>
</tr>
<tr>
<td>HE 112</td>
<td>First Aid and Emergency Care</td>
</tr>
<tr>
<td>MTH 30</td>
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<tr>
<td>SP 111</td>
<td>Public Speaking*</td>
</tr>
<tr>
<td>SP 130</td>
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</tr>
<tr>
<td>SP 140</td>
<td>Introduction to Intercultural Communication*</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>Business Program Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

*Could be used as General Education

1 Students that have not taken high school bookkeeping or have no work experience with full cycle bookkeeping should take BA 111 – Introduction to Accounting before enrolling in BA 211.

RETAIL MANAGEMENT

LESS THAN ONE-YEAR CERTIFICATE

Minimum 35 credits. Students must also meet certificates requirements. The Retail Management Certificate is a related certificate. All courses are contained in the Retail Management AAS Degree.

Retail Management Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 222</td>
<td>Financial Management</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
</tr>
<tr>
<td>BA 227</td>
<td>Business Law II</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
</tr>
<tr>
<td>BA 230</td>
<td>International Marketing</td>
</tr>
<tr>
<td>BA 237</td>
<td>Fundamentals of Import/Export</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
</tr>
</tbody>
</table>
The Business Administration Department confers a program award in International Business. This is not a career certificate but a program designed to enhance cultural awareness and expose the student to the international business environment in general. Students will be introduced to international law, international marketing, importing and exporting, global economics and the managerial implications of operating in a foreign environment. Courses may be offered at various locations. Placement test administered through assessment centers. 31 credits; includes 16 credit of required courses and 15 credits of restricted electives.

Note: Program award will be issued by the Sylvania Business Division to students who meet the requirements. Students should contact the Sylvania Business Division in their last term to apply for the award.

International Business Program Award Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<td>Introduction to International Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 234</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 237</td>
<td>Fundamentals of Import/Export</td>
<td>3</td>
</tr>
<tr>
<td>EC 230</td>
<td>Contemporary World Economic Issues:</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>International Economics</td>
<td></td>
</tr>
<tr>
<td>or PS 205</td>
<td>Global Politics: Conflict and Cooperation</td>
<td>4</td>
</tr>
</tbody>
</table>

International Business Electives

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ATH 207</td>
<td>Cultural Anthropology: Concepts</td>
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<tr>
<td>ATH 208</td>
<td>Cultural Anthropology: Cultures of the World</td>
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</tr>
<tr>
<td>ATH 209</td>
<td>Cultural Anthropology: Cultural Growth and Change</td>
<td>4</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems With Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA 212</td>
<td>Principles of Accounting II</td>
<td>3</td>
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<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 222</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 227</td>
<td>Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>BA 277</td>
<td>Business Practices and Contemporary</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social Issues</td>
<td></td>
</tr>
<tr>
<td>BA 280A</td>
<td>CE: Business Experience</td>
<td>varied</td>
</tr>
<tr>
<td>BA 280B</td>
<td>CE: Business Experience-Seminar</td>
<td>1</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>GEO 105</td>
<td>Introduction to Human Geography</td>
<td>4</td>
</tr>
<tr>
<td>GEO 106</td>
<td>Geography of the Developed World</td>
<td>4</td>
</tr>
<tr>
<td>GEO 107</td>
<td>Geography of the Developing World</td>
<td>4</td>
</tr>
<tr>
<td>HST 103</td>
<td>Western Civilization: Modern Europe</td>
<td>4</td>
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<tr>
<td>HST 104</td>
<td>History of Eastern Civilizations:</td>
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<tr>
<td></td>
<td>Middle East</td>
<td></td>
</tr>
<tr>
<td>HST 105</td>
<td>History of Eastern Civilizations:</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>India and Subcontinent</td>
<td></td>
</tr>
<tr>
<td>HST 106</td>
<td>History of China</td>
<td>4</td>
</tr>
<tr>
<td>HST 278</td>
<td>Russian History I</td>
<td>4</td>
</tr>
<tr>
<td>PHL 202</td>
<td>Introduction to Philosophy: Elementary Ethics</td>
<td>4</td>
</tr>
<tr>
<td>PS 220</td>
<td>U.S. Foreign Policy</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

Any modern language including English for Speakers of Other Languages (limited to nine credits)

**CAREER GUIDANCE AND COLLEGE SUCCESS**

Cascade Campus
Student Services Building (SSB), Room 150
971-722-5271

Rock Creek Campus
Building 9, Room 118
971-722-7300

Southeast Center
Tabor Hall (TH), Room 152
971-722-6256

Sylvania Campus
College Center (CC), Room 216
971-722-4531
DESCRIPTION

College students face numerous challenges, not the least of which are learning how to manage time, finances, and personal commitments. While developing an understanding of their own unique strengths and skills, students must choose an appropriate major and make careful career choices. These challenges, combined with those of everyday living, present an opportunity to grow from important life experiences, renew one’s career commitments, and oftentimes, manage an exciting career change.

PCC’s Career Guidance and College Success courses are designed to help students get the most out of their college experience; choose a career or major; explore changing careers; and assess and develop strengths and personal skills. “College Survival and Success” and “Scholarships: $$ for College” gives students the tools and resources to begin their college experience successfully; “Study Skills for College Learning” helps students develop their academic abilities; and “Career and Life Planning” offers students tools to make important major and career decisions. Other personal growth and self-enhancement courses, such as “Stress Management” and “Decision Making” allow students to grasp the day-to-day challenges they face in balancing school and life. See the Course Description (CG prefix) section of this catalog for individual Career Guidance and College Success courses and course prerequisites.

CHEMISTRY

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
971-722-7500

Sylvania Campus
Science Technology (ST), Room 312
971-722-4174

DESCRIPTION

Chemistry is the fundamental science of matter – its structure, composition, and transformations. As such, chemistry has wide applications in all the physical, biological, and behavioral sciences. Chemistry is involved in solving some of the most pressing problems facing our society today, such as environmental problems, medical issues, dwindling energy resources, the need for new and better materials, and worldwide food shortages.

Courses in chemistry are offered for students who will transfer to four-year institutions, who are completing requirements for career technical programs, or who are taking courses for personal enrichment. Chemistry courses at PCC are equivalent to freshman and sophomore courses at four-year colleges and universities. Students should check the specific requirements of the institution to which they plan to transfer prior to finalizing their course of study at PCC. For complete listing of Chemistry (CH prefix) courses, see Course Descriptions at the end of the catalog.

CHICANO/LATINO STUDIES

Rock Creek Campus
Building 3, Room 201
971-722-7235

DESCRIPTION

Chicano/Latino Studies is the interdisciplinary study of the social, cultural, political, economic, and historical forces that shaped and continue to shape the development of the people of Mexico and other Latin American countries in the United States over the past 300 years. Emphasis is on the experience of the Chicano/Mexican-American and other Latinos as residents and citizens in the United States and not in their countries of origin or descent.

The Chicano/Latino experience pre-dates the mid-19th century. Chicanos and other Latinos living in the United States have developed rich and extensive literature, and became involved in and made major contributions to all aspects of life in the United States.

PCC courses in this area of study are designed to transfer with full credit to the Chicano/Latino Studies Certificate program at Portland State University. They will transfer to most other colleges and universities as elective credit. Students planning to transfer to a college or university other than Portland State University should see an advisor for additional information and guidance. See the Course Description (CHLA prefix) section of this catalog for individual courses and course prerequisites.

CHINESE

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-3585

DESCRIPTION

All PCC Chinese courses are taught using an immersion method. The objective of all Chinese courses at PCC is to help students to develop communicative competence and proficiency in comprehension, speaking, reading, and writing Chinese as well as cultural awareness. Assessment is based on consistent attendance, active participation, and written and oral assignments.

There are no requirements or prerequisites for entry into the first term of first year Chinese. However, the student should read the Chinese course descriptions for other Chinese courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will not be admitted to a course if their skill level is too advanced for that course.

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend. See the Course Description (CHN prefix) section of this catalog for individual Chinese language courses and their prerequisites.
Civil Engineering Technology

Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4159
www.pcc.edu/cet

Career and Program Description
Civil engineering technicians are problem-solvers, working as part of a team involved in the planning, design, construction, operation, and management of many types of projects. These may include buildings, bridges, dams, highways, rapid transit facilities, airport and coastal improvements, land development projects, residential and commercial complexes, utilities, and environmental protection facilities such as water and wastewater treatment plants, air pollution control systems, solid and hazardous waste disposal systems, and storm water control facilities. These skilled professionals work on a variety of assignments including: design calculations, computer-aided drafting, environmental sampling, engineering and boundary surveying, laboratory testing, specification writing, technical sales, scheduling, estimating, and construction management, among others. Employers of CET's include consulting engineering firms, government agencies, utilities, construction companies, manufacturers, and materials testing laboratories.

The PCC Civil Engineering Technology program is designed to develop marketable skills in a broad range of technical areas, as well as in problem analysis and solution, spoken and written communication, computer software use, and computer-aided drawing. While providing a curriculum strong in mathematics and engineering topics, our teaching format also emphasize student involvement, teamwork, and extensive student-instructor interaction.

Degrees and Certificates Offered

Associate of Applied Science Degree
- Civil Engineering Technology
- Civil Engineering Technology: Green Technology and Sustainability Option

Two-Year Certificate
- Civil Engineering Technology

Prerequisites and Requirements
All students must have an advising interview with a civil engineering technology (CET) faculty advisor.

Civil Engineering Technology AAS requirements:
1. WR 115 or equivalent placement test score
2. MTH 60 or higher, or equivalent placement test score

Civil Engineering Technology: Green Technology and Sustainability AAS requirements:
1. WR 121 or equivalent placement score
2. MTH 60 or higher, or equivalent placement test score

Civil Engineering Technology Certificate requirements:
1. Placement into WR 115
2. Completed MTH 60 or higher

High school courses in chemistry and physics are helpful, but not required. Skill in keyboarding is highly recommended. A specific calculator is required.

For students not meeting these requirements, advising is available to assist in preparing for entrance into the program and to earn credits which will apply toward the certificate or degree once accepted into the program.

Full-time students: CET is a limited enrollment program for students seeking a certificate or degree. Qualified applicants are accepted in the order in which the application process is completed. Program starts in fall and winter terms. See a program advisor for other term starts.

Job-upgrade students: Non-program students seeking to upgrade job skills are welcome to enroll in individual courses. Students must meet individual course prerequisites and complete an advising interview with a CET faculty advisor prior to enrollment. Admission is granted on a space-available basis after the needs of the full-time students have been met.

Continuing education: Students of this program may transfer to various out-of-state institutions to pursue a Bachelor of Science degree in civil or construction engineering technology or to Oregon State University for a degree in construction engineering management. Faculty advisors will provide assistance in the selection of additional course work appropriate to each student’s goals.

Completion of CMET 131 with a C grade or higher will meet the PCC math competency requirement for the AAS degree.

Civil Engineering Technology

AAS Degree
Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Civil Engineering Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET</td>
<td>81</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>7</td>
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<tr>
<td>CH</td>
<td>5</td>
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<td>SP</td>
<td>4</td>
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<tr>
<td>WR</td>
<td>4</td>
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<tr>
<td><strong>Credit Total</strong></td>
<td><strong>101</strong></td>
</tr>
</tbody>
</table>

Course of Study
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>Statics</td>
</tr>
<tr>
<td>CMET 111</td>
<td>Engineering Tech Orientation</td>
</tr>
<tr>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
</tr>
<tr>
<td>CMET 113</td>
<td>Engineering Technology Graphics</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 104</td>
<td>Allied Health Chemistry I*</td>
</tr>
<tr>
<td>CMET 121</td>
<td>Strength of Materials</td>
</tr>
<tr>
<td>CMET 122</td>
<td>Technical Engineering Physics</td>
</tr>
<tr>
<td>CMET 123</td>
<td>Technical Algebra with Analytic Geometry</td>
</tr>
</tbody>
</table>
## PROGRAMS & DISCIPLINES

**Third Term**
- CMET 131 Applied Calculus 8
- CMET 227 Applied Electricity Fundamentals 2
- WR 121 English Composition 4

**CMET 280A** Cooperative Education, available any term after completing term three (optional)

**Fourth Term**
- CMET 132 Plane Surveying 3
- CMET 133 Materials Technology 3
- CMET 221 Environmental Systems 4
- CMET 213 Fluid Mechanics 3
- SP 100 Intro to Speech Communication* 4
  or
- SP 111 Public Speaking* (4)

**Fifth Term**
- CMET 228 Construction Materials 3
- CMET 212 Thermodynamics I 4
- CMET 211 Environmental Quality 4
- CMET 241 Structural Steel Drafting 3
- CMET 254 CMET Seminar 1

**General Education**
- 3

**Sixth Term**
- CMET 214 Route Surveying 3
- CMET 233 CET Applied Computer Aided Design 3
- CMET 222 Thermodynamics II 4
- CMET 223 Project Management 3
- CMET 236 Structural Design 3

**Green Technology and Sustainability AAS Degree**

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

### Green Technology and Sustainability Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET</td>
<td>81</td>
</tr>
<tr>
<td>CH</td>
<td>5</td>
</tr>
<tr>
<td>GEO</td>
<td>4</td>
</tr>
<tr>
<td>SOC</td>
<td>4</td>
</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>EET</td>
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</tbody>
</table>

**Credit Total 108**

**Green Technology and Sustainability Degree Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>110</td>
<td>Statics</td>
</tr>
<tr>
<td>CMET</td>
<td>227</td>
<td>Applied Electricity Fundamentals</td>
</tr>
<tr>
<td>CMET</td>
<td>132</td>
<td>Applied Calculus with Analytic Geometry</td>
</tr>
<tr>
<td>CMET</td>
<td>133</td>
<td>Applied Calculus</td>
</tr>
<tr>
<td>CMET</td>
<td>211</td>
<td>Environmental Quality</td>
</tr>
<tr>
<td>CMET</td>
<td>212</td>
<td>Thermodynamics I</td>
</tr>
<tr>
<td>CMET</td>
<td>213</td>
<td>Fluid Mechanics</td>
</tr>
<tr>
<td>CMET</td>
<td>214</td>
<td>Route Surveying</td>
</tr>
<tr>
<td>CMET</td>
<td>221</td>
<td>Environmental Systems</td>
</tr>
<tr>
<td>CMET</td>
<td>222</td>
<td>Thermodynamics II</td>
</tr>
<tr>
<td>CMET</td>
<td>223</td>
<td>Project Management</td>
</tr>
<tr>
<td>CMET</td>
<td>227</td>
<td>Applied Electricity Fundamentals</td>
</tr>
<tr>
<td>CMET</td>
<td>228</td>
<td>Construction Materials</td>
</tr>
<tr>
<td>CMET</td>
<td>233</td>
<td>CET Applied Computer Aided Design</td>
</tr>
<tr>
<td>CMET</td>
<td>236</td>
<td>Structural Design</td>
</tr>
<tr>
<td>CMET</td>
<td>241</td>
<td>Structural Steel Drafting</td>
</tr>
<tr>
<td>CMET</td>
<td>254</td>
<td>CMET Seminar</td>
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<tr>
<td>EET</td>
<td>110</td>
<td>Introduction to Renewable Energy</td>
</tr>
<tr>
<td>CH</td>
<td>265</td>
<td>Introduction to GIS*</td>
</tr>
<tr>
<td>GEO</td>
<td>228</td>
<td>Introduction to Environmental Sociology*</td>
</tr>
<tr>
<td>SOC</td>
<td>254</td>
<td>Public Speaking*</td>
</tr>
<tr>
<td>SP</td>
<td>111</td>
<td>(4)</td>
</tr>
</tbody>
</table>

**CIVIL ENGINEERING TECHNOLOGY TWO-YEAR CERTIFICATE**

Minimum 67 credits. Students must also meet certificate requirements. The Civil Engineering Technology Certificate is a related certificate. All courses are contained in the Civil Engineering Technology AAS Degree.

### Civil Engineering Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CMET</td>
<td>50</td>
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<tr>
<td>CH</td>
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<td>General Education</td>
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<td>SP</td>
<td>4</td>
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<tr>
<td>WR</td>
<td>4</td>
</tr>
</tbody>
</table>

**Credit Total 67**

### COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**
- CMET 110 Statics 4
- CMET 111 Engineering Technology Orientation 4
- CMET 112 Technical Algebra/Trigonometry 4
- CMET 113 Engineering Technology Graphics 3

**Second Term**
- CMET 121 Strength of Materials 4
- CMET 122 Technical Engineering Physics 4
- CMET 123 Technical Algebra with Analytic Geometry 4
- CH 104 Allied Health Chemistry I 5

**Third Term**
- CMET 131 Applied Calculus 8
- CMET 227 Applied Electricity Fundamentals 2
- WR 121 English Composition 4
- General Education 4
COMMUNICATION STUDIES

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7235

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Communications Technology Building (CT), Room 216
971-722-4264

DESCRIPTION
Communication studies is the study of human communication processes. By understanding human symbolic interaction, students may critically analyze and apply methods of persuasion in interpersonal, small-group, intercultural, business, public speaking, and mass media contexts. Communication Studies provides students with practical tools that enable them to develop, manage and maintain many types of relationships.

PCC offers three sequences of classes, which reflect differing approaches, for students who want a more focused study of communication: SP 140, 237, 214, 215 (Interpersonal Communication); SP 112, 228 (Persuasive Discourse); SP 130, 215, 237 (Business Communication). See the Course Description (SP prefix) section of this catalog for individual communication studies courses and their prerequisites. To learn whether courses will transfer to a four-year university, students must check with the institutions to which they intend to transfer.

COMPUTER AIDED DESIGN AND DRAFTING (CAD)

Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4163

Southeast Center
Mt. Tabor Hall (MTH), Room 128
971-722-6281

www.pcc.edu/drafting

CAREER AND PROGRAM DESCRIPTION
Design drafters are skilled technicians who interpret engineering data to produce sketches, plans and detailed working drawings used in manufacturing and construction. Career opportunities exist for drafters in many areas including: product design, electronic schematic, sheet metal layout, structural steel detailing, special tools and fixtures and machine design. Graduates are found working for manufacturing firms, construction companies, engineering firms, city, state and federal agencies or they may be self-employed. Advancement to positions of designer, drafting supervisor, or engineering technician are possible.

DEGREES AND CERTIFICATES OFFERED
Less than One-Year Certificate
Computer Aided Design and Drafting (CAD)

PREREQUISITES AND REQUIREMENTS
Students new to the certificate program must take the college's placement examination for math prior to program advising and registration. Students must place in MTH 60 and WR 115 before registering for first term drafting classes. Consult a program advisor for information on PCC's policy for acceptance of courses taken at other colleges or high schools or the transferability of PCC courses to other institutions. This program is designed to assist students in acquiring the knowledge and skills required of drafters and designers. The program and courses are developed with the advice and support of an advisory committee.

Both day and evening courses are offered. Contact a program advisor for curriculum variations.

Students must receive a C or better in all required classes in order to receive a certificate in computer aided design and drafting. D or F grades and pass/no pass options are not acceptable grades for department required classes. Modern CAD (computer aided drafting) labs provide the opportunity for CAD skill development using a variety of CAD software.

Full time students typically begin the computer aided design and drafting certification program during the fall term, and follow in sequential order. Fundamental classes are repeated on a periodic basis, which provides the student with a variety of options in completing their certification in a timely manner.

COMPUTER AIDED DESIGN AND DRAFTING
LESS THAN ONE-YEAR CERTIFICATE
Minimum 42 credits. Students must meet certificate requirements.

Computer Aided Design and Drafting
Certificate Credit Summary

<table>
<thead>
<tr>
<th>DRF</th>
<th>42</th>
</tr>
</thead>
</table>

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>DRF</th>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>100</td>
<td>Drafting Orientation</td>
<td>3</td>
</tr>
<tr>
<td>117</td>
<td>Drafting Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>126</td>
<td>Introduction to AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>136</td>
<td>Intermediate AutoCAD</td>
<td>3</td>
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</table>
Second Term

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF</td>
<td>Intermediate Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRF</td>
<td>AutoCAD Inventor Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>DRF</td>
<td>AutoCAD 3-D: Solid Modeling</td>
<td>3</td>
</tr>
<tr>
<td>DRF</td>
<td>SolidWorks Fundamentals</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF</td>
<td>Advanced Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRF</td>
<td>Kinematics Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRF</td>
<td>Advanced AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>DRF</td>
<td>SolidWorks Advanced</td>
<td>3</td>
</tr>
<tr>
<td>DRF</td>
<td>AutoCAD Inventor Advanced</td>
<td>3</td>
</tr>
</tbody>
</table>

COMPUTER APPLICATIONS AND OFFICE SYSTEMS

Cascade Campus
Moriarty Arts and Humanities Bldg (MAHB), Room 105
971-722-5317

Southeast Center
Mt. Tabor Hall (MTH), Room 128
971-722-6281

Rock Creek Campus
Building 3, Room 201
971-722-7235

Sylvania Campus
Technology Classroom Building (TCB), Room 312
971-722-4393 or 971-722-4287

www.pcc.edu/cas

CAREER AND PROGRAM DESCRIPTION

Portland Community College offers associate degrees and certificates of study within the Computer Applications and Office Systems Department. Associate degree programs may be completed in approximately two years and the certificate programs may be completed in approximately one year, assuming the student is enrolled on a full-time basis.

Students completing the Administrative Assistant Certificate will have also completed the first year’s work toward the Administrative Assistant Degree.

All programs of study in CAS/OS require placement in WR 115, RD 115 and MTH 20 and keyboarding by touch or CAS 121. Additional skill requirements are specified in course descriptions. Students with questions about entry-level readiness should arrange to meet with a department advisor. Placement examinations to assist students in selecting appropriate writing and mathematics courses are required prior to registration. Students must meet PCC’s writing and math competencies prior to graduation. See academic requirements in this catalog.

Due to the rapid changes in employment opportunities, technological advances, and certifying agency regulations, these programs are subject to change.

State-approved Certificates of Completion are designed to be completed in as short as one term but less than one year. These certificates help students attain skills for targeted entry-level jobs in specific areas of computer applications, office systems, and web development. The credits earned will provide a convenient pathway for students who wish to continue to pursue the one-year certificates and two-year AAS degrees in the program.

Administrative Assistant: An administrative assistant possesses advanced knowledge of popular software applications, excellent communication and interpersonal skills. An administrative assistant is prepared to make decisions, set priorities and establish work flow. Students who successfully complete the AAS, Administrative Assistant Degree will develop skills and knowledge appropriate to an entry-level office position as an administrative assistant. The program emphasis is on using business software, communications, Internet, and emerging technologies. All CAS/OS courses applied to this degree must be passed with a “C” or better.

Administrative Office Professional: Coordinates various office support services and frequently supervises office support staff. Establishes short range and long range plans for the office. This degree requires excellent communication and organizational skills. Students who successfully complete the AAS, Administrative Office Professional degree will develop skills and knowledge appropriate to an entry-level office position as an administrative assistant leading to managerial responsibilities. All CAS/OS courses applied to this degree must be passed with a “C” or better. This is a statewide program that provides connected instruction and pathway for completion between participating Oregon community colleges. Students may start at any participating college but transfer and complete credits at any appropriate college.

Website Development and Design: Represents a rapidly growing career and technology segment of industry that encompasses website development and design. This program prepares students to create and support websites using current industry standards and technology. Students will plan, create, manage, and market web-based business operations, products, and services. These skills are transferable to a wide variety of web-related careers. The Computer Applications/Office Systems (CAS/OS), Computer Informations Systems (CIS), and Multimedia (MM) Departments have partnered to create an Associate of Applied Science (AAS) degree. This interdisciplinary degree combines back-end programming and development skills with front-end design skills to prepare students for a wide variety of web-related careers. Furthermore, students in this program will learn the designing, implementing, testing, and troubleshooting skills needed for website construction and e-commerce applications, as well as incorporating multimedia techniques into websites with audio and video applications.

In addition to fundamental website development and design skills, students have the opportunity to select their electives from one of the following focus areas:

- Animation
- Database
- Design
- Programming: Java
- Programming: JavaScript
- Programming: Visual Basic
- Project Management
- Video for the Web
- Web Graphics

All students are advised to consult with a program advisor on their selection of electives. All CAS/OS courses applied to this degree must be passed with a “C” grade or better.
**Administrative Assistant Certificate**: Intended to meet business career needs for entry-level administrative assistants, secretaries, receptionists, file clerks and data entry personnel. Workers in these positions may perform a wide variety of duties such as working with office technology to produce and file business documents, greeting the public, planning and scheduling, accounting, and creating web pages. All CAS/OS courses applied to this certificate must be passed with a “C” or better.

**The Website Development and Design Certificate**: Intended to meet business career needs for entry-level positions that assist website developers, HTML programmers, web designers, web producers, and web technologists. Certificate completers will be able to create functional websites and assist in the production of professional dynamic websites. Administrative support personnel and entrepreneurs will gain the necessary skills to develop and manage departmental and personal websites. All CAS/OS courses applied to this certificate must be passed with a “C” or better.

**Computer Applications and Office Systems Career Pathways**: All CAS/OS courses applied to these certificates must be passed with a “C” or better.

### DEGREES AND CERTIFICATES OFFERED

#### Associate of Applied Science Degree
- Computer Applications/Office Systems: Administrative Assistant
- Administrative Office Professional
- Website Development and Design

#### One-Year Certificate
- Administrative Assistant
- Website Development and Design

#### Less than One-Year Certificate
- Virtual Assistant

#### Less than One-Year: Career Pathway Certificate
- Basic Computer Literacy
- Word Processing
- Spreadsheet
- Office Assistant
- Web Assistant I
- Web Assistant II

### ADMINISTRATIVE ASSISTANT AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

#### Administrative Assistant Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 123</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office or</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Admin Asst Degree Electives (4)
- CAS 140 | Beginning Access | 3 |
- CAS 170 | Beginning Excel | 3 |
- CAS 216 | Beginning Word | 3 |
- CAS 217 | Intermediate Word | 3 |
- CAS 246 | Integrated Computer Projects | 4 |
- MTH 30 | Business Math | 4 |
- OS 131 | 10-Key on Calculators | 1 |
- OS 220 | Business Editing Skills | 4 |
- OS 240 | Filing and Records Management | 4 |
- OS 245 | Office Systems and Procedures | 4 |
- OS 280F | CE: Administrative Assistant | 4 |
- OS 280G | CE: Administrative Assistant-Seminar | 1 |
- WR 121 | English Composition | 4 |
- Admin Asst Business Electives | 6 |
- Admin Asst Degree Electives | 12 |
- General Education | 16 |

#### Administrative Assistant Business Electives

Any BA course in addition to the required BA courses from the Administrative Assistant certificate. May not include BA 131 if CAS 133 was taken.

#### Administrative Assistant Degree Electives

May take any CAS/OS course in addition to the required CAS/OS courses from the Administrative Assistant degree or certificate. CIS 178 may be taken as a CAS/OS Elective.

### ADMINISTRATIVE OFFICE PROFESSIONAL AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

#### Administrative Office Professional Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
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<td>27</td>
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<tr>
<td>CAS</td>
<td></td>
<td>26</td>
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<tr>
<td>WR</td>
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Credit Total 90

#### Administrative Office Professional Degree Courses

<table>
<thead>
<tr>
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<tr>
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<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
</tbody>
</table>
## WEBSITE DEVELOPMENT AND DESIGN AAS DEGREE

Minimum 95 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

### Website Development and Design Degree Credit Summary

| CAS 111D | Beginning Website: Dreamweaver | 3 |
| CAS 111E | begininning Website Creation: Expression Web | (3) |
| CAS 122 | Keyboarding for Speed and Accuracy | 3 |
| CAS 133 | Basic Computer Skills/Microsoft Office | 4 |
| CAS 170 | Beginning Excel | 3 |
| CAS 171 | Intermediate Excel | 3 |
| CAS 216 | Beginning Word | 3 |
| CAS 217 | Intermediate Word | 3 |
| CAS 246 | Integrated Computer Projects | 4 |
| OS 131 | 10-Key on Calculators | 1 |
| OS 220 | Business Editing Skills | 4 |
| OS 240 | Filing and Records Management | 4 |
| OS 245 | Office Systems and Procedures | 4 |
| OS 280F | Cooperative Education | 4 |
| WR 121 | English Composition | 4 |

General Education 16

Credit Total 95

### Website Development and Design Degree Courses

| CAS 181J | CMS Website Creation: Joomla | 3 |
| CAS 181D | CMS Website Creation: Drupal | (3) |
| CAS 181W | CMS Website Creation: WordPress | (3) |
| CAS 206 | Principles of XHTML | 4 |
| CAS 208 | Beginning PhotoShop for the Web | 3 |
| CAS 211D | Intermediate Dreamweaver | 3 |
| CAS 213 | JavaScript and jQuery for Designers | 4 |
| CIS 233S | Internet Web Page Scripting | (4) |
| CAS 215 | CSS and Dynamic HTML | 4 |
| CAS 225 | PHP and MySQL for Designers | 4 |
| CIS 195P | PHP Web Development | (4) |
| CAS 280W | CE: Website Development | 4 |
| CAS 285 | Capstone for Website Dev/Design Degree | 3 |
| CIS 121 | Computer Concepts II* | 4 |
| CIS 122 | Software Design* | 4 |
| MM 110 | Introduction to Multimedia | 1 |
| MM 120 | Multimedia Design | 2 |
| MSD 279 | Project Management - Intro | 4 |
| WR 121 | English Composition | 4 |
| Website Development and Design Electives | 12 |
| General Education | 8 |

*Could be used as General Education

### Website Development and Design Electives

| ART 115 | Basic Design* | 3 |
| ART 116 | Basic Design* | 3 |
| ART 140 | Digital Photography* | 3 |
| BA 255 | Project Management-Business Environment | 4 |
| CAS 110 | Intro to Web Graphics - Fireworks | 1 |
| CAS 111E | Beginning Website: Expression Web | 3 |
| CAS 181D | CMS Website Creation:Drupal | 3 |
| CAS 181J | CMS Website Creation: Joomla | 3 |
| CAS 181W | CMS Website Creation:WordPress | 3 |
| CAS 214 | Beginning ColdFusion/CFML | 4 |
| CAS 220 | Project Management: Beginning MS Project | 3 |
| CAS 275 | Intermediate Flash | 3 |
| CIS 125D | Database Application Development I | 4 |
| CIS 133B | Introduction to Visual Basic | 4 |
| CIS 133J | .NET Programming | 4 |
| CIS 137 | Java Programming I | 4 |
| CIS 179 | Web Technical Administration | 4 |
| CIS 187I | PHP Web Development | 4 |
| CIS 195P | Int. Visual Basic NET Program | 4 |
| CIS 233B | Java Programming II | 4 |
| CIS 234B | Adv. Visual Basic NET Program | 4 |
| CIS 234J | Java Programming III | 4 |
| CIS 245 | Project Management-Info Systems | 4 |
| CIS 275 | Data Modeling and SQL Intro | 4 |
| CIS 276 | Advanced SQL | 4 |
| CIS 287I | Web Server Administration | 4 |
| MM 130 | Multimedia Graphic Video and Audio Production | 3 |
| MM 140 | Multimedia Authoring I | 3 |
| MM 160 | Marketing Yourself as a Multimedia Professional | 2 |
| MM 220 | Multimedia Design II | 3 |
PORTLAND COMMUNITY COLLEGE  ■  2012-2013

**PROGRAMS & DISCIPLINES**

<table>
<thead>
<tr>
<th>Program</th>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
<td></td>
<td>4</td>
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<tr>
<td>MM 231</td>
<td>Vector Graphics and Animation for the World Wide Web</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Edit/Production</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MM 236</td>
<td>Deliver Digital Video/Audio File</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MM 240</td>
<td>MM Authoring II - Scripting</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MM 241</td>
<td>MM Authoring III - Scripting</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MM 245</td>
<td>Internet Delivery Methods</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

*Could be used as General Education
*Electives may be selected from one of the following focus areas: Animation, Database, Design, Programming: Java, Programming: JavaScript, Programming: Visual Basic, Project Management, Video for the Web, or Web Graphics. All students are advised to consult with a program advisor on their selection of electives.

### ADMINISTRATIVE ASSISTANT ONE-YEAR CERTIFICATE

Minimum 52 credits. Students must meet certificate requirements.

#### Administrative Assistant Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>13</td>
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<tr>
<td>OS</td>
<td>13</td>
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<tr>
<td>BA</td>
<td>10</td>
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<tr>
<td>CAS/Admin Asst Certificate Elective</td>
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<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Total 52

#### Administrative Assistant Certificate Courses

**BA 111** Introduction to Accounting

**BA 205** Solving Communication Problems with Technology

**BA 285** Human Relations-Organizations

**CAS 123** Production Keyboarding

**CAS 133** Basic Computer Skills/Windows Office

**CAS/Admin Asst Certificate Elective**

#### Administrative Assistant Certificate Electives List

May take any CAS/OS course in addition to the required CAS/OS courses from the Administrative Assistant certificate. CIS 178 may be taken as a CAS/OS Elective.

### WEBSITE DEVELOPMENT AND DESIGN ONE-YEAR CERTIFICATE

58 minimum credits. Students must meet certificate requirements.

#### Website Development and Design Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>29</td>
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<tr>
<td>Website DandD Certificate Electives</td>
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</tr>
<tr>
<td>BA/CIS</td>
<td>4</td>
</tr>
<tr>
<td>CAS/CIS</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>3</td>
</tr>
<tr>
<td>BA/MM/WR</td>
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</tr>
<tr>
<td>MM</td>
<td>3</td>
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Credit Total 58

#### Website Development and Design Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
</tr>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing</td>
</tr>
<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-Commerce Information Systems</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
</tr>
<tr>
<td>CAS 101</td>
<td>Intro to Website Development and Design</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Website: Dreamweaver</td>
</tr>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash</td>
</tr>
<tr>
<td>CAS 180</td>
<td>Search Engine Optimization</td>
</tr>
<tr>
<td>CAS 181J</td>
<td>CMS Website Creation: Joomla</td>
</tr>
<tr>
<td>CAS 181D</td>
<td>CMS Website Creation: Drupal</td>
</tr>
<tr>
<td>CAS 181W</td>
<td>CMS Website Creation: WordPress</td>
</tr>
<tr>
<td>BA 206</td>
<td>Principles of X/HTML</td>
</tr>
<tr>
<td>BA 208</td>
<td>Beginning Photoshop for the Web</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver</td>
</tr>
<tr>
<td>CAS 213</td>
<td>JavaScript and JQuery for Designers</td>
</tr>
<tr>
<td>CAS 233S</td>
<td>Internet Web Page Scripting</td>
</tr>
<tr>
<td>CAS 215</td>
<td>CSS and Dynamic HTML</td>
</tr>
<tr>
<td>CAS 280W</td>
<td>CE: Website Development</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Computer Concepts II</td>
</tr>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
</tr>
<tr>
<td>Website Development and Design Certificate Electives</td>
<td>8</td>
</tr>
</tbody>
</table>

#### Website Development and Design Certificate Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 115</td>
<td>Basic Design - 2D Foundations</td>
</tr>
<tr>
<td>ART 116</td>
<td>Basic Design-Color Foundations</td>
</tr>
<tr>
<td>ART 140</td>
<td>Digital Photography</td>
</tr>
<tr>
<td>BA 255</td>
<td>Project Management-Business Environment</td>
</tr>
<tr>
<td>CAS 110</td>
<td>Intro to Web Graphics - Fireworks</td>
</tr>
<tr>
<td>CAS 111E</td>
<td>Beginning Website: Expression Web</td>
</tr>
<tr>
<td>CAS 181D</td>
<td>CMS Website Creation: Drupal</td>
</tr>
<tr>
<td>CAS 181J</td>
<td>CMS Website Creation: Joomla</td>
</tr>
<tr>
<td>CAS 181W</td>
<td>CMS Website Creation: WordPress</td>
</tr>
</tbody>
</table>
**Virtual Assistant Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>13</td>
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<tr>
<td>BA</td>
<td>7</td>
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<td>CAS</td>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

2 Electives may be selected from one of the following focus areas: Animation; Database; Design; Programming; Java; Programming; Visual Basic; Project Management; Video for the Web; or Web Graphics. All students are advised to consult with a program advisor on their selection of electives.

**Virtual Assistant Certificate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>214 Beginning ColdFusion/CFML</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>220 Project Management: Beginning MS Project</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>225 PHP and MySQL for Designers</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>275 Intermediate Flash</td>
<td>3</td>
</tr>
<tr>
<td>CIS</td>
<td>122 Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>125D Database Application Development I</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>133B Introduction to Visual Basic .NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>133J Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>179 Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>187I Web Technical Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>195P PHP Web Development I</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>233B Intermediate Visual Basic .NET Program</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>233J Java Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>234B Advanced Visual Basic .NET Program</td>
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</tr>
<tr>
<td>CIS</td>
<td>234J Java Programming III</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>245 Project Management-Info Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>275 Data Modeling and SQL Intro</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>276 Advanced SQL</td>
<td>4</td>
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<td>CIS</td>
<td>287I Web Server Administration</td>
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<tr>
<td>MM</td>
<td>130 Multimedia Graphic Video and Audio Production</td>
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<tr>
<td>MM</td>
<td>140 Multimedia Authoring I</td>
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<tr>
<td>MM</td>
<td>160 Marketing Yourself as a Multimedia Professional</td>
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<tr>
<td>MM</td>
<td>220 Multimedia Design II</td>
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<tr>
<td>MM</td>
<td>230 Graphics for Multimedia</td>
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<tr>
<td>MM</td>
<td>231 Vector Graphics and Animation for the World Wide Web</td>
<td>3</td>
</tr>
<tr>
<td>MM</td>
<td>235 Digital Video Edit/Production</td>
<td>3</td>
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<td>240 MM Authoring II - Scripting</td>
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</tr>
<tr>
<td>MM</td>
<td>241 MM Authoring III - Scripting</td>
<td>4</td>
</tr>
<tr>
<td>MM</td>
<td>245 Internet Delivery Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

**Virtual Assistant Less Than One Year Certificate**

Minimum 27 credits. Students must meet all certificate requirements.

**Virtual Assistant Certificate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>111 Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>205 Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>111D Beginning Website: Dreamweaver</td>
<td>3</td>
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<tr>
<td>CAS</td>
<td>246 Integrated Computer Projects</td>
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<tr>
<td>OS</td>
<td>250 Creating a Virtual Office</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>251 Virtual Office Concepts</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>280F CE: Administrative Assistant</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>280G CE: Administrative Assistant-Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**Computer Applications and Office Systems Career Pathway Certificates**

**Basic Computer Literacy:**

**Career Pathway Certificate**

Minimum 13 credits. The Basic Computer Literacy Certificate is a Career Pathway. All courses are contained in the Administrative Assistant AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>122 Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>133 Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>170 Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>216 Beginning Word</td>
<td>3</td>
</tr>
</tbody>
</table>

If a student already has knowledge of basic computer skills they may take a class from Administrative Assistant Certificate electives list.

**Word Processing:**

**Career Pathway Certificate**

Minimum 26 credits. The Word Processing Certificate is a Career Pathway. All courses are contained in the Administrative Assistant AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>122 Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>123 Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>170 Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>216 Beginning Word</td>
<td>3</td>
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<tr>
<td>CAS</td>
<td>231 Publisher</td>
<td>3</td>
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<tr>
<td>OS</td>
<td>220 Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>121 English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

**Spreadsheet:**

**Career Pathway Certificate**

Minimum 27 credits. The Spreadsheet Certificate is a Career Pathway. All courses are contained in the Administrative Assistant AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>111 Introduction to Accounting</td>
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</tr>
<tr>
<td>CAS</td>
<td>122 Keyboarding for Speed and Accuracy</td>
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<td>216 Beginning Word</td>
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<td>CAS</td>
<td>217 Intermediate Word</td>
<td>(3)</td>
</tr>
<tr>
<td>MTH</td>
<td>30 Business Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>131 10-Key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>WR</td>
<td>121 English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

**Office Assistant:**

**Career Pathway Certificate**

Minimum 43 credits. The Office Assistant Certificate is a Career Pathway. All courses are contained in the Administrative Assistant and AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>205 Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>109 Beginning PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CAS</td>
<td>123 Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>140 Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>170 Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>171 Intermediate Excel</td>
<td>(3)</td>
</tr>
<tr>
<td>CAS</td>
<td>216 Beginning Word</td>
<td>3</td>
</tr>
</tbody>
</table>

2 Electives may be selected from one of the following focus areas: Animation; Database; Design; Programming; Java; Programming; Visual Basic; Project Management; Video for the Web; or Web Graphics. All students are advised to consult with a program advisor on their selection of electives.
WEB ASSISTANT I: CAREER PATHWAY CERTIFICATE
Minimum 14 credits. The Web Assistant I Certificate is a Career Pathway. All courses are contained in the Website Development and Design AAS Degree.

<table>
<thead>
<tr>
<th>CAS</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Intro to Website Development and Design</td>
<td>1</td>
</tr>
<tr>
<td>110</td>
<td>Introduction to Web Graphics</td>
<td>1</td>
</tr>
<tr>
<td>or</td>
<td>Beginning Photoshop for the Web</td>
<td>(3)</td>
</tr>
<tr>
<td>206</td>
<td>Principles of X/HTML</td>
<td>4</td>
</tr>
<tr>
<td>215</td>
<td>CSS and Dynamic HTML</td>
<td>4</td>
</tr>
<tr>
<td>280W</td>
<td>CE: Website Development</td>
<td>1</td>
</tr>
</tbody>
</table>

WEB ASSISTANT II: CAREER PATHWAY CERTIFICATE
Minimum 24 credits. The Web Assistant II Certificate is a Career Pathway. All courses are contained in the Website Development and Design AAS Degree.

<table>
<thead>
<tr>
<th>CAS</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Intro to Website Development and Design</td>
<td>1</td>
</tr>
<tr>
<td>110</td>
<td>Introduction to Web Graphics</td>
<td>1</td>
</tr>
<tr>
<td>or</td>
<td>Beginning Photoshop for the Web</td>
<td>(3)</td>
</tr>
<tr>
<td>111D</td>
<td>Beginning Website: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>180</td>
<td>Search Engine Optimization-SEO</td>
<td>3</td>
</tr>
<tr>
<td>181J</td>
<td>CMS Website Creation: Joomla</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>CMS Website Creation: Drupal</td>
<td>(3)</td>
</tr>
<tr>
<td>181W</td>
<td>CMS Website Creation: WordPress</td>
<td>(3)</td>
</tr>
<tr>
<td>206</td>
<td>Principles of X/HTML</td>
<td>4</td>
</tr>
<tr>
<td>211D</td>
<td>Intermediate Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>215</td>
<td>CSS and Dynamic HTML</td>
<td>4</td>
</tr>
<tr>
<td>280W</td>
<td>CE: Website Development</td>
<td>2</td>
</tr>
</tbody>
</table>

COMPUTER INFORMATION SYSTEMS

Sylvania Campus
Technology Classroom Building (TCB), Room 312
971-722-4287 or 971-722-4393
www.pcc.edu/cis

CAREER AND PROGRAM DESCRIPTION
Computer Information Systems are the lifeblood of the 21st century. The mainstream languages, tools, technologies and techniques used in training will allow students to pursue careers in either the computer networking or information software fields. On the networking side, computer configuration, network installation, network systems administration, security, forensics and wireless networking are some career choices. On the software side, student career choices include all phases of application development, database programming, software quality assurance, Health Informatics and project management on both desktop and World Wide Web platforms.

Computer Information Systems AAS Degree: This degree prepares students for computer information systems related careers. Students will take classes in the CIS Department that include software analysis, design, programming (in two or more languages), database modeling, Windows or Unix operating systems, data communications and an extensive selection of electives. (In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 95.)

CIS: Network Administration AAS Degree: This degree prepares students for computer networking related careers. Students will take classes in the CIS Department including data communications, Windows and Linux network administration, network security and an extensive selection of electives. Students earning this degree will be well on their way to several network administration certifications from Microsoft and Comp TIA. (In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 95.)

Health Informatics AAS Degree: This degree prepares students for health informatics related careers. Students will take classes in the CIS department that include software analysis, design, programming, database modeling, Windows and Unix operating systems, and an extensive selection of electives. Students earning this degree will be well on their way to several network administration certifications from Microsoft and Comp TIA. (In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 95.)

Computer Information Systems One-Year Certificate: This certificate provides students with a foundation in computer information systems concepts. Students seeking this certificate often have various primary roles in their organizations and are taking on additional responsibilities involving information systems. All required courses in this program apply toward the credits needed to obtain an AAS degree in Computer Information Systems or CIS Network Administration. (In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 60.)

Computer Information Systems: E-Commerce One-Year Certificate: This certificate prepares students for careers in Internet based commerce including web server administrator, webmaster, E-Commerce manager, help desk/user support specialist, web technologist and web developer. Specialists in these positions, with both a business and technical perspective, will be able to resolve multi tier E-Commerce issues involving connectivity, security and scalability. Students must have a strong CIS background before beginning this certificate. This may be accomplished by obtaining a CIS AAS degree or by equivalent industry experience. In order to follow the recommended sequence of courses, students should be ready to enter WR 227 (professional and technical writing) and MTH 60.
Readiness for all Computer Information System degrees and certificates can be demonstrated through the math placement test and documented previous college level work for the WR 121 requirement. Those students with insufficient background to enter at this level may need to extend the time it takes to complete the program. CIS Department advisors will provide information regarding options to those students who may need to take preparatory course work.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Computer Information Systems
Computer Information Systems: Network Administration Option
Health Informatics

One-Year Certificate
Computer Information Systems
Computer Information Systems: E-Commerce

Less than One-Year Certificate: Career Pathway
Windows Network Security
Linux/Unix Network Security
Network Administration
Microsoft Server Administration
Linux Server Administration
Web Application Development
Oracle and SQL
Java Application Programming
Database Design and SQL
VB.Net Application Programming

COMPUTER INFORMATION SYSTEMS AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Computer Information Systems Degree Credit Summary
CIS Program Electives 36
CIS 32
CIS Programming Electives 8
Remaining General Education 8
CIS Program Business Electives 6
WR 4
Credit Total 94

Computer Information Systems Degree Courses
CIS 120 Computer Concepts I* 4
CIS 121 Computer Concepts II* 4
CIS 122 Software Design* 4
CIS 140M Operating Systems I: Microsoft 4
or
CS 140U Introduction to UNIX 4
CIS 179 Data Communication Concepts I 4
CIS 244 Systems Analysis 4
CIS 275 Data Modeling and SQL Introduction 4
WR 121 English Composition 4
WR 122 English Composition 4
or
WR 227 Technical and Professional Writing I (4)
CIS Program Electives 1 36
CIS Programming Electives 2 8
Remaining General Education 8
CIS Program Business Electives 3 6*

*Could be used as General Education
1 CIS Program Electives - 36 credits total, 20 credits must be at the 200 level.
2 For the Computer Information Systems AAS Degree, eight credits of Programming electives must be a two-term sequence from the Programming Elective List.
3 Choose from the CIS Program Business Electives List.

Computer Information Systems Programming Electives
CS 161 and CS 162 Computer Science sequence 8
CIS 133B and CIS 233B Visual Basic.NET sequence 8
CIS 133J and CIS 233J JAVA Programming sequence 8

Computer Information Systems Program Electives
CIS 125D Database Application Development I 4
CIS 133B Introduction to Visual Basic.NET Programming 4
CIS 133J Java Programming I 4
CIS 135T XML and HL7 4
CIS 140M Operating Systems I: Microsoft 4
CIS 140S PerlScript Programming 1
CIS 145 Microcomputer Hardware and Troubleshooting 4
CIS 178 Applied Internet Concepts 4
CIS 179 Data Communication Concepts I 4
CIS 185 Computer and Ethics 3
CIS 187I Web Technical Administration 4
CIS 188 Introduction to Wireless Networking 4
CIS 189 Wireless Security 4
CIS 195P PHP Web Development I 4
CIS 225 End User Support 4
CIS 233B Intermediate Visual Basic.NET Programming 4
CIS 233J Java Programming II 4
CIS 233S Internet Web Page Scripting 4
CIS 234B Advanced Visual Basic.NET Programming 4
CIS 234J Java Programming III 4
CIS 234N C# Programming 4
CIS 234S Web Application Development Using .NET 4
CIS 240L Linux Installation and Configuration 4
CIS 240M Managing a Windows Server Environment 4
CIS 243 E-essentials of E-Commerce Information Systems 4
CIS 244 Systems Analysis 4
CIS 245 Project Management-Information Systems 4
CIS 246 Structured Systems Design 4
CIS 275 Data Modeling and SQL Introduction 4
CIS 276 Advanced SQL 4
CIS 277D Data Security 4
CIS 277O Advanced Database Concepts in Oracle 4
CIS 277T Web Business Intelligence Development 4
CIS 278 Data Communication Concepts II 4
CIS 279L Linux Network Administration 4
CIS 280D CE: Application Development 1 4
CIS 284 Network Security 4
### Computer Information Systems Program Business Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>Basic Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Non-Profit Financial Management and Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Introduction to Records Management</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Office Management</td>
<td>3</td>
</tr>
<tr>
<td>EC</td>
<td>Principles of Economics: Microeconomics*</td>
<td>4</td>
</tr>
<tr>
<td>EC</td>
<td>Principles of Economics: Macroeconomics*</td>
<td>3</td>
</tr>
<tr>
<td>EC</td>
<td>Principles of Economics: Applications to Economic Issues*</td>
<td>4</td>
</tr>
</tbody>
</table>

* Could be used as General Education

### NETWORK ADMINISTRATION AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Network Administration Degree Credit Summary**

**Network Administration Degree Courses**

**Remaining General Education**

**Network Administration Degree Electives**

### Computer Information Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS</td>
<td>120   Computer Concepts I*</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>121   Computer Concepts II*</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>122   Software Design*</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>140M  Operating Systems I: Microsoft</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>145   Microcomputer Hardware and Troubleshooting</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>179   Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>244   Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CS</td>
<td>140U  Introduction to UNIX</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>121   English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>122   English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>227   Technical and Professional Writing I</td>
<td>4</td>
</tr>
</tbody>
</table>

Network Administration Degree Electives 1

Remaining General Education: 8

CIS Program Business Electives: 6

CIS Programming Electives 1

* Could be used as General Education

Network Administration Electives - 36 credit total, 20 credits must be at the 200 level.

Choose from the CIS Program Business Electives List.

### Computer Information Systems

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS</td>
<td>178   Applied Internet Concepts</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>187I  Web Technical Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>188   Introduction to Wireless Networking</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>189   Wireless Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>225   End User Support</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>240L  Linux Installation and Configuration</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>240M  Managing a Windows Server Environment</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>278   Data Communications Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>279L  Linux Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>280D  CE: Application Development varied</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>284   Network Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>286   Computer Forensics</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>287I  Web Server Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>287M  Microsoft Server Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>288M  Microsoft Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS</td>
<td>289M  Microsoft Active Directory Administration</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Total 94

### Network Administration Degree Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>203   Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>206   Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>211   Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>212   Principles of Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>213   Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>215   Basic Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>222   Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>223   Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>226   Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>227   Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>234   International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>240   Non-Profit Financial Management and Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>242   Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>244   Introduction to Records Management</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>250   Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>251   Office Management</td>
<td>3</td>
</tr>
<tr>
<td>EC</td>
<td>201   Principles of Economics: Microeconomics*</td>
<td>4</td>
</tr>
<tr>
<td>EC</td>
<td>202   Principles of Economics: Macroeconomics*</td>
<td>4</td>
</tr>
<tr>
<td>EC</td>
<td>203   Principles of Economics: Applications to Economic Issues*</td>
<td>4</td>
</tr>
</tbody>
</table>
Computer Information Systems Programming Electives
CS 161 and CS 162 Computer Science sequence 8
CIS 133B and CIS 233B Visual Basic.NET sequence 8
CIS 133J and CIS 233J JAVA Programming sequence 8

HEALTH INFORMATICS AAS DEGREE
Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Health Informatics Degree Credit Summary
CIS 28
Health Informatics Degree Electives 17
Remaining General Education 1 16
HIM 14
CIS/CS 4
BA 7
Beginning Programming Electives 4
Intermediate Programming Electives 4
MP 2
Credit Total 96

Health Informatics Degree Courses
BA 205 Solving Communication Problems with Technology 4
BA 211 Principles of Accounting I 3
CIS 125D Database Application Development I 4
CIS 140M Operating Systems I: Microsoft 4
or
CS 140U Introduction to UNIX 4
CIS 179 Data Communication Concepts I 4
CIS 244 Systems Analysis 4
CIS 245 Project Management-Information System 4
CIS 275 Data Modeling and SQL Introduction 4
CIS 276 Advanced SQL 4
CIS 280D CE: Application Development 4
or
CIS 277H Health Informatics Environment Simulation 4
HIM 110 Health Information Technology I 4
HIM 182 Health Care Delivery Systems 3
HIM 283 Health Information Systems 4
HIM 285 Healthcare Financing and Compliance 3
MP 109 Basic Medical Terminology 2
Health Informatics Electives 17
Remaining General Education 16
Beginning Programming Electives 4
Intermediate Programming Electives 4

Beginning Programming Electives
CIS 122 Software Design 4
CIS 133B Introduction to Visual Basic.NET Programming 4
CIS 133J Computer Programming I 4
CS 161 Computer Science I 4

Intermediate Programming Electives
CIS 135T XML and HL7 4
CIS 233B Intermediate Visual Basic.NET Programming 4

CIS 233J Java Programming II 4
CS 162 Computer Science II 4

Health Informatics Degree Electives
BA 224 Human Resource Management 3
BA 255 Project Management-Business Environments 4
BI 112 Cell Biology for Health Occupations 5
BI 121 Introduction to Human Anatomy and Physiology I 4
BI 122 Introduction to Human Anatomy and Physiology II 4
BI 231 Human Anatomy and Physiology I 4
BI 232 Human Anatomy and Physiology II 4
BI 233 Human Anatomy and Physiology III 4
CS 140U Introduction to UNIX 4
CIS 145 Operating Systems I: Microsoft 4
CIS 140M Microcomputer Hardware and Troubleshooting 4
CIS 188 Introduction to Wireless Networking 4
CIS 189 Wireless Security 4
CIS 225 End User Support 4
CIS 240L Linux Installation and Configuration 4
CIS 240M Managing a Windows Server Environment 4
CIS 277D Database Security 4
CIS 277M Advanced Database Concepts in Oracle 4
CIS 278 Web Business Intelligence Development 4
CIS 279L Data Communications Concepts I 4
CIS 279M Data Communications Concepts II 4
CIS 284 Microsoft Network Administration 4
CIS 288M Microsoft Active Directory Administration 4
CIS 289M Quality Improvement In Healthcare 3
HIM 271 Quality Improvement in Healthcare-Lab 1
HIM 274 Data Management and Analysis I 3
HIM 281 Data Management and Analysis I-Lab 2
HIM 286 Basic Medical Terminology II 2
MP 110 Medical Terminology 4
MP 111 Project Management - Intro 4
OS 220 Business Editing Skills 4
WR 122 English Composition 4
WR 227 Technical and Professional Writing I 4

*Could be used as General Education
1 If applied to General Education requirement, students must also take an additional and equal number of credits from the Health Informatics Elective list.

COMPUTER INFORMATION SYSTEMS ONE-YEAR CERTIFICATE
Minimum 46 credits. Students must meet all certificate requirements.

Computer Information Systems Certificate Credit Summary
CIS 12
CIS Program Electives 12
WR 8
CIS/CIS 4
PSY 4
CAS/DRF/CIS Program Elective 3
CIS Program Business Electives 3
Credit Total 46

Computer Information Systems Certificate Courses
CIS 120 Computer Concepts I 4
CIS 121 Computer Concepts II 4
CIS 122 Software Design 4
### E-Commerce One-Year Certificate

Minimum 48 credits. Students must meet all certificate requirements.

#### E-Commerce Certificate Credit Summary

**Track A Design and Development**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 225</td>
<td>End User Support</td>
<td>4</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-Commerce Info Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CIS 280D</td>
<td>CE: Application Development</td>
<td>1</td>
</tr>
<tr>
<td>201A</td>
<td>Introduction to Psychology</td>
<td>4</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I</td>
<td>4</td>
</tr>
<tr>
<td>E-Commerce Business Electives</td>
<td>3</td>
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</tr>
</tbody>
</table>

**Total Credits:** 48

**Track A: Design and Development Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics</td>
<td>1</td>
</tr>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash 1</td>
<td>3</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver 1</td>
<td>3</td>
</tr>
<tr>
<td>CAS 213</td>
<td>JavaScript and JQuery for Designers 1</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233B</td>
<td>Intermediate VB.NET</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233J</td>
<td>Java Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233S</td>
<td>Internet Web Page Scripting</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234B</td>
<td>Advanced VB.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234J</td>
<td>Java Programming III</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234S</td>
<td>Web Application Development</td>
<td>4</td>
</tr>
<tr>
<td>CIS 276</td>
<td>Advanced SQL</td>
<td>4</td>
</tr>
<tr>
<td>CIS 277D</td>
<td>Database Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 277O</td>
<td>Advanced Database Concepts – Oracle</td>
<td>4</td>
</tr>
<tr>
<td>CIS 277T</td>
<td>Web Business Intelligence Development</td>
<td>4</td>
</tr>
<tr>
<td>CIS 280D</td>
<td>CE: Application Development</td>
<td>1</td>
</tr>
<tr>
<td>MM 130</td>
<td>MM Graphics Video and Audio Production 1</td>
<td>3</td>
</tr>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia 1</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits:** 48

#### E-Commerce Track B Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 225</td>
<td>End User Support</td>
<td>4</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-Commerce Info Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CIS 280D</td>
<td>CE: Application Development</td>
<td>1</td>
</tr>
<tr>
<td>PSY 201A</td>
<td>Intro to Psychology</td>
<td>4</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I</td>
<td>4</td>
</tr>
<tr>
<td>E-Commerce Business Electives</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits:** 48

**Track B: Administration Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 203</td>
<td>Intro to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits:** 48

### Computer Information Systems: Career Pathway Certificates

#### Database Design and SQL: Career Pathway Certificate

Minimum 12 credits. The Database Design and SQL Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 125D</td>
<td>Database Application Development</td>
<td>4</td>
</tr>
<tr>
<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CIS 276</td>
<td>Advanced SQL</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits:** 48

#### Microsoft Server Administration: Career Pathway Certificate

Minimum 24 credits. The Microsoft Server Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degrees.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 140M</td>
<td>Operating Systems I: Microsoft</td>
<td>4</td>
</tr>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 240M</td>
<td>Managing a Windows Server Environment</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits:** 48

---

1 Note: Maximum of eight credits will apply.
PORTLAND COMMUNITY COLLEGE • 2012-2013

PROGRAMS & DISCIPLINES

Minimum 16 credits. The VB.Net Application Programming Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 287M Microsoft Server Security 4
- CIS 288M Microsoft Network Administration 4
- CIS 289M Microsoft Active Directory Administration 4

LINUX/UNIX SERVER NETWORK SECURITY: CAREER PATHWAY CERTIFICATE

Minimum 28 credits. The Linux/Unix Server Administration Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 179 Data Communication Concepts I 4
- CIS 189 Wireless Security 4
- CIS 240L Linux Installation and Configuration 4
- CIS 279L Linux Network Administration 4
- CIS 284 Network Security 4
- CIS 286 Computer Forensics 4
- CS 140U Introduction to UNIX 4

WINDOWS NETWORK SECURITY: CAREER PATHWAY CERTIFICATE

Minimum 36 credits. The Windows Network Security Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 140M Operating Systems I: Microsoft 4
- CIS 179 Data Communication Concepts I 4
- CIS 189 Wireless Security 4
- CIS 240M Managing a Windows Server Environment 4
- CIS 284 Network Security 4
- CIS 286 Computer Forensics 4
- CIS 287M Microsoft Server Security 4
- CIS 288M Microsoft Network Administration 4
- CIS 289M Microsoft Active Directory Administration 4

JAVA APPLICATION PROGRAMMING: CAREER PATHWAY CERTIFICATE

Minimum 16 credits. The Java Application Programming Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 122 Software Design 4
- CIS 133J Java Programming I 4
- CIS 233J Java Programming II 4
- CIS 234J Java Programming III 4

NETWORK ADMINISTRATION: CAREER PATHWAY CERTIFICATE

Minimum 16 credits. The Network Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degree.

- CIS 179 Data Communication Concepts I 4
- CIS 189 Introduction to Wireless Networking 4
- CIS 189 Wireless Security 4
- CIS 278 Data Communication Concepts II 4

VB.NET APPLICATION PROGRAMMING: CAREER PATHWAY CERTIFICATE

Minimum 16 credits. The VB.Net Application Programming Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 122 Software Design 4
- CIS 133B Introduction to Visual Basic.NET Programming 4
- CIS 233B Intermediate Visual Basic.NET Programming 4
- CIS 234B Advanced Visual Basic.NET Programming 4

LINUX SERVER ADMINISTRATION: CAREER PATHWAY CERTIFICATE

Minimum 16 credits. The Linux Server Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degree.

- CIS 179 Data Communication Concepts I 4
- CIS 240L Linux Installation and Configuration 4
- CIS 279L Linux Network Administration 4
- CS 140U Introduction to UNIX 4

ORACLE AND SQL: CAREER PATHWAY CERTIFICATE

Minimum 12 credits. The Oracle and SQL Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 276 Advanced SQL 4
- CIS 277O Advanced Database Concepts – Oracle 4
- CIS 277T Web Business Intelligence Development 4

WEB APPLICATION DEVELOPMENT: CAREER PATHWAY CERTIFICATE

Minimum 16 credits. The Web Application Development Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

- CIS 195P PHP Web Development I 4
- CIS 233S Internet Web Page Scripting 4
- CIS 234S Web Application Development Using .NET 4
- CIS 295P PHP Web Development II 4

COMPUTER SCIENCE

Rock Creek Campus
Building 2, Room 230
971-722-7331 or 971-722-7604
Sylvania Campus
Technology Classroom Building (TCB), Room 312
971-722-4393 or 971-722-4287
www.pcc.edu/cs

DESCRIPTION

Computer science is the study of information systems, their representation, architecture, and implementation, used for a variety of practical and theoretical purposes. Computer science addresses methods by which data is accessed, stored, and retrieved, which include areas such as representational computation, programming languages, algorithmic modeling, and software design, testing and development. Computer scientists apply their knowledge of mathematics, physics, and logic to solve a variety of problems using diverse technology.
Students learn practical methods of reasoning, problem-solving, and theoretical analysis to develop their skills in computer science. While exploring general courses in programming, systems analysis, mathematics, and physics, students apply their skills to core challenges within the field. PCC offers students the opportunity to earn an Associate of Arts Oregon Transfer (AAOT) degree. Students may also complete courses as preparation for a bachelor’s or advanced degree or update skills to industry standards. Students wishing to transfer credits must check the specific requirements of the college/university to which they intend to transfer. Articulation agreements exist with Portland State University, Oregon State University, and the Oregon Institute of Technology for the two-year transfer degree. See the Course Description (CS prefix) section of this catalog for individual computer science courses and their prerequisites.

CREATIVE WRITING FOCUS AWARD

SEE FOCUS AWARDS SECTION OF THIS CATALOG

CRIMINAL JUSTICE

Cascade Campus
Public Service Education Building (PSEB), Room 121
971-722-5629 or 971-722-5236
www.pcc.edu/cj

CAREER AND PROGRAM DESCRIPTION

Persons in the criminal justice field may work in a municipal, county, state or federal law enforcement organization or corrections system. Positions requiring law enforcement education are available at all levels of government and in private industry. Duties range from crime prevention programs to investigative and uniform patrols. Technical skills such as data processing and criminalistics are used to support overall criminal justice operations.

The Corrections Technician Certificate gives students the skills and knowledge needed for entry-level technical work in a correctional setting. This certificate identifies the first step in an educational pathway for the AAS degree in Criminal Justice. This certificate provides a credential to students who want to work in the field as they continue on their educational pathways. Most of the courses can be used for the AAS degree should the student choose to continue their education.

PREREQUISITES AND REQUIREMENTS

Students must pass all prerequisites with a C or better in order to enroll in any CJA courses with a “200” or higher designator.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
   Criminal Justice

One-Year Certificate
   Juvenile Corrections (Suspended)

Less than One-Year: Career Pathway Certificate
   Corrections Technician Certificate

CRIMINAL JUSTICE AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Criminal Justice Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office 4</td>
</tr>
<tr>
<td>CJA 100</td>
<td>Professions in Criminal Justice 3</td>
</tr>
<tr>
<td>CJA 101</td>
<td>Cultural Diversity in Criminal Justice Professions 3</td>
</tr>
<tr>
<td>CJA 111</td>
<td>Introduction to Criminal Justice System - Police 3</td>
</tr>
<tr>
<td>CJA 112</td>
<td>Introduction to Criminal Justice System – Courts 3</td>
</tr>
<tr>
<td>CJA 113</td>
<td>Introduction to Criminal Justice System – Corrections 3</td>
</tr>
<tr>
<td>CJA 114</td>
<td>Introduction to Juvenile Process 3</td>
</tr>
<tr>
<td>CJA 210</td>
<td>Arrest, Search and Seizure 3</td>
</tr>
<tr>
<td>CJA 211</td>
<td>Civil Liability and Ethics in Criminal Justice 3</td>
</tr>
<tr>
<td>CJA 212</td>
<td>Criminal Law 3</td>
</tr>
<tr>
<td>CJA 225</td>
<td>Criminal Justice and the United States Constitution 3</td>
</tr>
<tr>
<td>CJA 230</td>
<td>Police Report Writing 4</td>
</tr>
<tr>
<td>CJA 243</td>
<td>Narcotics and Dangerous Drugs 3</td>
</tr>
<tr>
<td>CJA 244</td>
<td>Tactical Communication in Crisis Incidents 3</td>
</tr>
<tr>
<td>PS 201</td>
<td>U.S. Government: Foundations and Principals* 4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>PS 203</td>
<td>State and Local Government* (4)</td>
</tr>
<tr>
<td>PSY 201A</td>
<td>Introduction to Psychology* 4</td>
</tr>
<tr>
<td>PSY 239</td>
<td>Introduction to Abnormal Psychology* 4</td>
</tr>
<tr>
<td>SOC 206</td>
<td>Social Problems* 4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>SOC 204</td>
<td>Sociology in Everyday Life* (4)</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking* 4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition 4</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I 4</td>
</tr>
<tr>
<td>CJA Degree Electives</td>
<td>12</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
</tbody>
</table>

*Could be used as General Education

Criminal Justice Degree Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJA 115</td>
<td>Introduction to Jail Operations 3</td>
</tr>
</tbody>
</table>
The Culinary Assistant Program is designed for students with disabilities who have significant barriers to employment. Students develop entry level job skills in food service and custodial service.

The program also focuses on the acquisition of work habits and behaviors necessary to maintain competitive employment.

**DEGREES AND CERTIFICATES OFFERED**

**One-Year Certificate**

Culinary Assistant Training

**PREREQUISITES AND REQUIREMENTS**

An interview with the program coordinator is required prior to enrollment. Qualified students must be 18 years or older with a documented disability, have the ability to work semi-independently, willing to learn and improve.

Students can enroll at the beginning of each fall, winter or spring term of a year. Students work with PCC Food Services or Facilities Management Services to learn the specific job skills in their work area. Individualized training and assistance in maintaining positive work habits are provided by the program coordinator. Classroom sessions focus on good work ethics, positive attitude, appropriate work behaviors, professionalism, etc. Developing job success skills, specific job-related knowledge (such as food safety, job safety, money handling, etc), as well as job search technique. The program coordinator also provides six hours of individualized job development activities with each student.

**CULINARY ASSISTANT TRAINING**

**ONE-YEAR CERTIFICATE**

Minimum 45 credits. Students must meet all certificate requirements

**Culinary Assistant Certificate Credit Summary**

<table>
<thead>
<tr>
<th>HR</th>
<th>107</th>
<th>Culinary Assistant Training</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>108</td>
<td>Culinary Assistant Training</td>
<td>15</td>
</tr>
<tr>
<td>HR</td>
<td>109</td>
<td>Culinary Assistant Training</td>
<td>15</td>
</tr>
</tbody>
</table>

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>HR</th>
<th>107</th>
<th>Culinary Assistant Training</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>108</td>
<td>Culinary Assistant Training</td>
<td>15</td>
</tr>
<tr>
<td>HR</td>
<td>109</td>
<td>Culinary Assistant Training</td>
<td>15</td>
</tr>
</tbody>
</table>

**DANCE**

Cascade Campus
Terrell Hall (TH), Room 2200
971-722-5251

Rock Creek
Building 3, Room 201
971-722-7235

Sylvania Campus
Communications Technology Building (CT), Room 216
971-722-4264

**DESCRIPTION**

PCC offers dance technique and theory courses designed to ex-
plore dance at the beginning through intermediate levels. Courses emphasize correct alignment, principles of movement, development of individual dance skills, and an awareness and appreciation of dance as a performing art. The study of dance develops physical and mental discipline, expands cultural perspectives, enhances personal growth and enrichment, and supports lifelong learning. Dance performance opportunities for students include participation in informal showings, dance concerts and Dance Performance (D 209).

Most dance courses are offered concurrently and co-listed in both the Music and Dance Department and the Physical Education Department. Students may choose to take the courses for dance or PE credit, which may be applied to degree and/or transfer programs. Students may not sign up for dance and PE credit for the same class in the same term. Students should check transferability of specific dance courses with the institution to which they are planning to transfer.

Although a physical exam is not required for physical education and dance courses, students are advised to seek approval from their personal physician before entering into a regular program of vigorous physical activity as is found in physical education and dance courses. Students will be asked to complete personal data cards to hand into their instructors prior to the beginning of their classes. Personal data cards include any personal health information that could impact participation in class activities: diabetes, cardiac history, past or current injuries, etc. PCC does not provide medical coverage. All students are strongly encouraged to acquire medical coverage prior to taking a physical education, dance or any other physical activity class.

See the Course Description (D prefix and PE prefix) section of this catalog for individual dance courses and course prerequisites. Contact the Music and Dance Department, and the Physical Education and Fitness Department for additional information.

DEALER SERVICE TECHNOLOGY

Rock Creek Campus
Building 2, Room 230
971-722-7465
www.pcc.edu/thinkbig

CAREER AND PROGRAM DESCRIPTION
This program is a partnership between Portland Community College, Caterpillar Corp and the five Northwest Caterpillar dealerships. It is an industry specific two-year associate degree program with required on-the-job training/internships at a sponsoring Caterpillar dealership. It is designed to prepare individuals to become qualified Caterpillar service technicians. Students learn how to work on many types of Caterpillar equipment including agricultural, construction, forestry and earth moving equipment. The Dealer Service Technology Program combines technical and academic education with real world experience through paid on the job training. Students learn about engine fundamentals, machine hydraulics, fuel systems, electrical systems, transmissions, torque converters, undercarriage, final drives and more. During the four paid internships students have the opportunity to experience a future career firsthand through on-the-job training. Upon completion of the program students will earn an Associate of Applied Science Degree from Portland Community College.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Dealer Service Technology

PREREQUISITES AND REQUIREMENTS
Applicants must take the placement test administered through the testing center at PCC, or a center provided by their CAT dealer contact person. Prospective students must sign a release of information form to allow their CAT dealership access to their educational records and PCC the ability to share information with the dealership. To begin the program students must secure a paid CAT dealership internship (required to stay in program). Final selection for this program is based on the capacity of each CAT dealership’s allotted seats in the program and actual hire as a CAT intern by a sponsoring CAT dealership. This is a two year, nine term program (24 months). Students must meet General Education and Comprehensive Degree requirements. Required minimum program entrance level requirements: Placement into MTH 60 or higher. Placement into WR 115 or higher, placement into RD 115 or higher and placement into MTH 60 or higher.

Application and Acceptance Process: All prospective students must apply to PCC and their prospective sponsoring CAT dealership. For details on final program acceptance and other information contact 971-722-7465.

DEALER SERVICE TECHNOLOGY AAS DEGREE

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Dealer Service Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>DST</th>
<th>78</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>WLD</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Total 101

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>DST</th>
<th>Caterpillar Engine Fundamentals</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST</td>
<td>Introduction to Caterpillar Service Industry</td>
<td>3</td>
</tr>
<tr>
<td>WLD</td>
<td>Diesel Welding</td>
<td>3</td>
</tr>
</tbody>
</table>

Second term

<table>
<thead>
<tr>
<th>DST</th>
<th>Caterpillar Service Technology Internship (Part I)</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>DST</th>
<th>Fundamentals of Hydraulics</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST</td>
<td>Caterpillar Engine Fuel Systems</td>
<td>4</td>
</tr>
</tbody>
</table>
## Programs & Disciplines

### Dental Assisting

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth Term (1st Module)</td>
<td>Caterpillar Service Technology Internship (Part I)</td>
<td>6</td>
</tr>
<tr>
<td>Fourth Term (2nd Module)</td>
<td>Caterpillar Service Technology Internship (Part II)</td>
<td>6</td>
</tr>
<tr>
<td>Fifth Term</td>
<td>Caterpillar Service Technology Internship (Part III)</td>
<td>6</td>
</tr>
<tr>
<td>Sixth Term</td>
<td>Undercarriage and Final Drive</td>
<td>4</td>
</tr>
<tr>
<td>Seventh Term</td>
<td>Caterpillar Service Technology Internship (Part IV)</td>
<td>6</td>
</tr>
<tr>
<td>Eighth Term</td>
<td>Caterpillar Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Caterpillar Machine Diagnostic</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Machine Specific Systems</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

### Career and Program Description

The dental assistant is a member of the dental team, working with and assisting the dentist and hygienist during clinical procedures. Traditional duties and responsibilities include: Exposing and developing dental radiographs, mixing dental materials, organizing and preparing treatment rooms, passing dental instruments and materials to the dentist, taking impressions, preparing, placing and removing rubber dams, placing topical anesthetic, fluoride and desensitizing agents, sterilizing instruments, disinfecting dental equipment, comforting patients during dental procedures and educating patients on various dental procedures. Graduates are also prepared to perform the following expanded duties: Polish teeth and restorations, fabricate and cement temporary crowns, remove cement, place temporary restorations, place and remove matrix retainers, place sealants, and temporary denture relines and perform various orthodontic duties.

Computer skills are an important asset to a dental assistant. Dental computer programs are learned in the office procedures courses.

The Dental Assisting program is a limited entry program with restricted enrollment. The program is limited to 45 students. Applications are accepted from October 1 to April 15. Application forms may be obtained from the Health Admissions Office or at [www.pcc.edu/da](http://www.pcc.edu/da) and should be submitted along with high school and college transcripts to:

**Health Admissions Office**  
Sylvania Campus, (HT) Room 205  
Portland Community College  
P.O. Box 19000  
Portland, Oregon 97280-0990

Candidates will be notified of their admission status by mid to late May. For information call 971-722-4795 or 971-722-4236, or check the website [www.pcc.edu/da](http://www.pcc.edu/da).

### Degrees and Certificates Offered

**One-Year Certificate**

Dental Assisting  
Accredited by the Commission on Dental Accreditation without reporting requirements.

### Prerequisites and Requirements

All aspects of the Dental Assisting Program are continually assessed to provide ongoing excellence and continuing improvement, and are subject to change.

1. High school or college transcripts showing a minimum 2.0 GPA, or GED.
2. Completion of the following courses or their equivalents, with a C or better, is required to be considered for application to the Dental Assisting Program.
   a. WR 115 or higher level writing course (Placement into WR 121 can substitute for the WR 115 course)
   b. Approved college level health or nutrition course. Recommended classes include HE 250, HPE 295, or FN 225.
   c. Placement into MTH 20 or higher.
   d. Approved college level Psychology course. PSY 101 is recommended.

Applicants should plan to have all courses complete by the end of winter term. Courses planned for spring term may not be considered. Pass/No Pass grade is not acceptable in prerequisites. It is the applicant's responsibility to update their information by providing final grades of courses which are in progress at the time of application.

3. All students are required to be immunized against Hepatitis B as well as evidence of immunity to measles, tetanus immunization and current tuberculin skin test (TST). Positive TST will require evidence of normal chest x-ray (supply upon acceptance).

4. A Valid CPR card.

### Criminal Background Check

All PCC students enrolled in a health care or child care program, including Dental Assisting, with requirements for practical experience of field training must pass a Criminal History Check (CHC) as a condition of their acceptance into a medical or other facility for training.

Students who do not pass the CHC are not eligible to complete training at affiliated practicum sites, to sit for licensure or certifi-
The Dental Assisting Certificate prepares the student for job entry with State and National certification in dental radiology, basic dental assisting and expanded function dental assisting.

Students enrolled in the Dental Assisting Program perform exposure prone procedures and are required to wear safety glasses, gloves, face masks and protective clothing during all laboratory and clinic activities that produce airborne particulate matter, or expose students to patients during dental procedures. An exposure prone procedure is one in which there is an increased opportunity for the exchange of blood borne pathogens between the patient and the dental health care provider because of the kind of procedure being performed.

Safety policies, procedures and protocols are taught and followed according to OSHA regulations and CDC Standards to provide a safe learning and patient care environment. The program policies on bloodborne pathogens and infectious disease are available to applicants upon request. Upon acceptance to the program, extensive training in this area will occur.

Applicants who have an infectious disease or who are carriers of an infectious disease should seek counsel from their physician and the program director prior to application. The college follows CDC suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health care settings, from the CDC’s Guidelines for Infection Control in Dental Healthcare Settings--2003 available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm, Table 1, attached to and incorporated by this reference to this policy.

### DENTAL ASSISTING ONE-YEAR CERTIFICATE

Minimum 45 credits. Students must meet certificate requirements.

<table>
<thead>
<tr>
<th>Dental Assisting Certificate Credit Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Assisting</td>
</tr>
<tr>
<td>Credit Total</td>
</tr>
</tbody>
</table>

#### COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
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<tr>
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</tr>
<tr>
<td>Clinical Procedures I</td>
<td></td>
</tr>
<tr>
<td>DA 111</td>
<td>2</td>
</tr>
<tr>
<td>Clinical Procedures I Lab</td>
<td></td>
</tr>
<tr>
<td>DA 120</td>
<td>2</td>
</tr>
<tr>
<td>Dental Radiology I</td>
<td></td>
</tr>
<tr>
<td>DA 121</td>
<td>2</td>
</tr>
<tr>
<td>Dental Radiology I Lab</td>
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</tr>
<tr>
<td>DA 130</td>
<td>1</td>
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<tr>
<td>Dental Materials I</td>
<td></td>
</tr>
<tr>
<td>DA 131</td>
<td>2</td>
</tr>
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<td>Dental Materials I Lab</td>
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<td>DA 140</td>
<td>3</td>
</tr>
<tr>
<td>Integrated Basic Science I</td>
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</tr>
<tr>
<td>DA 160</td>
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<tr>
<td>Dental Pharmacology</td>
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**Second Term**

<table>
<thead>
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<tbody>
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<tr>
<td>Clinical Procedures II</td>
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</tr>
<tr>
<td>DA 113</td>
<td>3</td>
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<tr>
<td>Clinical Procedures II Lab</td>
<td></td>
</tr>
<tr>
<td>DA 118</td>
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<tr>
<td>Expanded Duties I</td>
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<tr>
<td>DA 122</td>
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<tr>
<td>Dental Radiology II</td>
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<tr>
<td>DA 123</td>
<td>2</td>
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<tr>
<td>Dental Radiology II Lab</td>
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**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
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<tr>
<td>Clinical Procedures III</td>
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<tr>
<td>DA 115</td>
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<tr>
<td>Clinical Procedures Lab III</td>
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</tr>
<tr>
<td>DA 119</td>
<td>1</td>
</tr>
<tr>
<td>Expanded Duties II</td>
<td></td>
</tr>
<tr>
<td>DA 125</td>
<td>2</td>
</tr>
<tr>
<td>Dental Radiology III Lab</td>
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<td>DA 135</td>
<td>2</td>
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<tr>
<td>Dental Materials III Lab</td>
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<td>DA 152</td>
<td>2</td>
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<tr>
<td>Dental Office Procedures II</td>
<td></td>
</tr>
<tr>
<td>DA 156</td>
<td>1</td>
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<tr>
<td>Ethics and Jurisprudence</td>
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</tr>
</tbody>
</table>

### DENTAL HYGIENE

Sylvania Campus
Health Technology Building (HT), Room 206
971-722-4236
Health Admissions Office
Health Technology Building (HT), Room 205
971-722-4795
www.pcc.edu/dh

#### CAREER AND PROGRAM DESCRIPTION

The dental hygienist is a licensed dental health care professional who specializes in periodontal therapy and oral health education. A broad-based education in biological sciences and humanities as well as dental sciences and clinical techniques prepares the graduate for work in private practice and community settings. In the dental office, the hygienist assesses the patient's oral health, treats periodontal (gum) disease and provides follow-up care. In addition, the hygienist provides a variety of preventive services including the application of fluoride and sealants, tobacco and nutritional counseling and oral health education to individuals and community groups.

The Dental Hygiene Program offers a two-year curriculum that is accredited by the Commission on Dental Accreditation without reporting requirements. The program of study prepares students for the National Board written examination and regional licensure examinations.

Computer skills: Students must have acquired basic computer skills in word processing and the Internet. It is recommended that this preparation be taken prior to entry. The Dental Hygiene program requires one course of nutrition, speech, sociology and psychology.

Applications are accepted each year from January 1 to April 15 only. Twenty students and twelve alternates will be selected based upon specific admissions criteria. Further information can be obtained from the Dental Sciences Department or the Health Admissions Office:

**Health Admissions Office**
Sylvania Campus, (HT) Room 205
Portland Community College
P.O. Box 19000
Portland, Oregon 97280-0990

For additional help call 971-722-4795 or check the website www.pcc.edu/dh.
PREREQUISITES AND REQUIREMENTS

Completion of the following courses or their equivalents with a C or higher are required to be considered for application to the Dental Hygiene Program:

1. WR 121 English Composition
2. MTH 65 or higher
3. BI 231 and BI 232 Human Anatomy and Physiology sequence with lab
4. BI 234 Microbiology with lab must be completed within the last seven years
5. CH 102 or 106, Organic Chemistry Principles

*Students planning to transfer dental hygiene course work to a university baccalaureate degree should take BI 231, 232, 233 and CH 104, 105, 106.

All prerequisite course must be complete by the end of winter term prior to the application deadline. Courses planned for spring term will not be considered. Pass/No Pass evaluation is not acceptable in the prerequisite courses. The Dental Hygiene Program is a limited entry program with restricted enrollment. The admissions process is competitive and based on a point system. Applicants with the highest point totals will be accepted. Completing admission requirements and applying to the programs does not guarantee admission. For our current point evaluation sheet please visit www.pcc.edu/dh. Candidates will be notified of their admissions status by the beginning of June.

3. All students are required to be immunized against Hepatitis B as well as evidence of immunity to measles. Tetanus immunization and current tuberculin skin test (TST). Positive TST will require evidence of normal chest x-ray (supply upon acceptance).

4. Valid CPR for the Healthcare Provider Card

Students enrolled in the Dental Hygiene Program will be performing exposure prone procedures and will be required to wear safety glasses, gloves, face masks and protective clothing during all laboratory and clinic activities that produce airborne particulate matter, or expose students to patients during dental procedures. An exposure prone procedure is one in which there is an increased opportunity for the exchange of blood borne pathogens between the patient and the dental health care provider because of the kind of procedure being performed.

Safety policies, procedures and protocols are taught and followed according to OSHA regulations and CDC standards to provide a safe learning and patient care environment. The program policies on Bloodborne Pathogens and Infectious Disease are available to applicants upon request. Upon acceptance to the program, extensive training in this area will occur.

Applicants who have an infectious disease or who are carriers of an infectious disease should seek counsel from their physician and the program director prior to application. The college will follow CDC suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health care settings, from the CDC's Guidelines for Infection Control in Dental Health-Care Settings–2003, available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm Table 1, attached to and incorporated by this reference to this policy.

All PCC students enrolled in a health care or child care program, including dental hygiene, with requirements for practical experience of field training may have to pass a Criminal History Check (CHC) as a condition of their acceptance into a medical or other facility for training.

Students who do not pass the CHC may not be eligible to complete training at affiliated practicum sites, to sit for licensure or certification exams, or be hired for some professional positions. If you believe that your past history may interfere with your ability to complete the program of study or to obtaining licensure, or certification in your chosen field, you should contact the appropriate state board or program director.

DENTAL HYGIENE AAS DEGREE

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Dental Hygiene Degree Credit Summary

| DH     | 88 |
| General Education | 16 |
| FN     | 4  |
| **Credit Total** | **108** |

COURSE OF STUDY

The following is a general example of a course of study. Students should consult with a program advisor for course planning.

First Term

| DH 101 | Dental Hygiene Theory I | 4 |
| DH 104 | Dental Hygiene Practice I | 3 |
| DH 113 | Dental Anatomy | 2 |
| DH 113L | Dental Anatomy Lab | 1 |
| DH 121 | Oral Health Education and Promotion | 1 |
| DH 127 | Medical Emergencies | 2 |
| **General Education** | **4** |

Second Term

| DH 102 | Dental Hygiene Theory II | 2 |
| DH 105 | Dental Hygiene Practice II | 3 |
| DH 110 | Cariology | 2 |
| DH 128 | Oral Histology | 2 |
| DH 228 | Head and Neck Anatomy | 2 |
| DH 236 | Ethics and Jurisprudence | 1 |
| DH 230 | Dental Materials | 2 |
| **General Education** | **4** |

Third Term

| DH 103 | Dental Hygiene Theory III | 2 |
| DH 106 | Dental Hygiene Practice III | 3 |
| DH 109 | Dental Radiology I | 2 |
| DH 109L | Dental Radiology I Lab | 1 |
| DH 129 | Oral Pathology | 3 |
| DH 240 | Intro to Dental Hygiene Restorative | 2 |
| DH 246 | Pharmacology | 3 |
| **General Education** | **4** |
Fourth Term
DH 210 Dental Radiology Lab II 1
DH 241 Dental Hygiene Restorative Dentistry I 4
DH 242 Dental Hygiene Restorative Dentistry II 4
FN 225 Nutrition 4
or
FN 270 Normal and Applied Nutrition (4)

Fifth Term
DH 201 Dental Hygiene Theory IV 2
DH 204 Dental Hygiene Practice IV 5
or
DH 204A Dental Hygiene Practice IV 2 (1)
and
DH 204B Dental Hygiene Practice IV 4
DH 208 Community Oral Health I 2
DH 229 Local Anesthesia 2
DH 243 Dental Hygiene Restorative Dentistry III 1
DH 260 Periodontology I 2

Sixth Term
DH 202 Dental Hygiene Theory V 3
DH 205 Dental Hygiene Practice V 5
DH 244 Dental Hygiene Restorative Dentistry IV 1
DH 250 Research Methods and Issues in Oral Health 1
DH 252 Community Oral Health II 2

Seventh Term
DH 203 Dental Hygiene Theory VI 2
DH 206 Dental Hygiene Practice VI 5
DH 245 Dental Hygiene Restorative Dentistry V 1
DH 253 Community Oral Health III 2

*Could be used as General Education

1 Recommended General Education: SP 111, PSY 101, SOC 204
2 DH 204A is only offered in the summer (fourth) term.

Optional Dental Hygiene Courses
Students should consult with program advisor for assistance with planning electives.

DH 100 Special Dental Hygiene Practice I or II 1-5
DH 232 Nitrous Oxide Sedation (Elective) 2

DENTAL LABORATORY TECHNOLOGY

Sylvania Campus
Health Technology Building (HT), Room 206
971-722-4236

Health Admissions Office
Health Technology Building (HT), Room 205
971-722-4795

www.pcc.edu/dlt

CAREER AND PROGRAM DESCRIPTION

The dental laboratory technologist is a professional member of the dental team and is considered the “artist” of that group. Using an order from a dentist, the technician designs and fabricates dental replacements such as crowns, bridges, dentures and orthodontic appliances. In the process, the technician carves complex structures and designs in wax, casts and finishes a variety of metals, and duplicates tooth form and color in acrylic resin or porcelain materials.

PCC offers a two-year program that is accredited by the Commission on Dental Accreditation without reporting requirements. Applications are accepted on a rolling basis throughout the academic year. All prerequisites must be completed by summer term in the year in which you apply. The program starts fall term only. Enrollment is limited, so students are encouraged to apply early. Application forms may be obtained from and should be submitted to:

Health Admissions Office
Sylvania Campus, HT 205
Portland Community College
P.O. Box 19000
Portland, Oregon 97280-0990

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Dental Laboratory Technology

Two-Year Certificate
Dental Laboratory Technology

PREREQUISITES AND REQUIREMENTS

1. GED or high school graduation. (Proof of completion/graduation must be submitted in your application)
2. Completion of RD 90 or WR 115 with a C or better or college placement into RD 115.
4. Satisfactory performance of wax carving tests (prerequisite).
5. Students must show evidence of having begun or completed the immunization series for Hepatitis B.
6. Students must complete MTH 65 or higher. A math competency exam is not sufficient for graduating.

Students enrolled in the Dental Laboratory Technology Program will be required to wear safety glasses or goggles and face masks during procedures that produce airborne particulate matter. Additional protective wear and gear may be required. Safety policies, procedures and protocols are taught and reinforced throughout the curriculum according to industry standards and OSHA regulations to provide a safe learning environment. All aspects of the Dental Laboratory Technology Program are continually assessed to provide on-going excellence and continuing improvement, and are subject to change.

Skill upgrade courses
Laboratory practicums are offered to experienced technicians who wish to upgrade their skills in any of the five specialties. Laboratory credits vary from 1-5, depending on the technicians needs.

DENTAL LABORATORY TECHNOLOGY AAS DEGREE

Minimum 95 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Sci-
ence Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Dental Laboratory Technology Degree Credit Summary**

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sixth Term</td>
<td>DT 206 Dental Technology Lab VI</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DT 271 Partials, Clasp and Bar</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 284 Dental Specialties</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 285 Dental Seminar and Practicum</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Dental Laboratory Technology Electives**

- BA 101 Introduction to Business: 4 credits
- BA 226 Business Law: 4 credits
- EC 200 Introduction to Economics: 4 credits
- EC 201 Introduction to Economics: 4 credits

**DENTAL LABORATORY TECHNOLOGY TWO-YEAR CERTIFICATE**

Minimum 79 credits. Students must meet all certificate requirements.

**Dental Laboratory Technology Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>DT 101 Dental Technology Lab I</td>
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<tr>
<td></td>
<td>DT 120 Dental Anatomy</td>
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<tr>
<td></td>
<td>DT 141 Denture Techniques I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 151 Science of Dental Materials I</td>
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</tr>
<tr>
<td></td>
<td>HE 125 First Aid and Industrial Safety</td>
<td>3</td>
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<td>General Education</td>
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<tr>
<td>Second Term</td>
<td>DT 102 Dental Technology Lab II</td>
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<tr>
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<td>DT 142 Denture Techniques II</td>
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<td>DT 152 Science of Dental Materials II</td>
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<td></td>
<td>HE 125 First Aid and Industrial Safety</td>
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<tr>
<td></td>
<td>MTH 20 Basic Math (or higher level math courses)</td>
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<td>Third Term</td>
<td>DT 103 Dental Technology Lab III</td>
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<td></td>
<td>DT 143 Denture Techniques III</td>
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<td></td>
<td>SP 100 Introduction to Speech Communication*</td>
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<td></td>
<td>DT Degree Electives</td>
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<td>Fourth Term</td>
<td>DT 204 Dental Technology Lab IV</td>
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<td>DT 253 Science of Dental Materials III</td>
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<tr>
<td></td>
<td>DT 270 Inlay Casting, Crown and Bridge</td>
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<td>DT 275 Dental Laboratory Management</td>
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<tr>
<td>Fifth Term</td>
<td>DT 205 Dental Technology Lab V</td>
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<td></td>
<td>DT 254 Science of Dental Materials IV</td>
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<td></td>
<td>DT 272 Dental Ceramics</td>
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<td>DT 276 Dental Laboratory Management Lab</td>
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</tr>
</tbody>
</table>

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.
DIESEL SERVICE TECHNOLOGY

Rock Creek Campus
Building 2, Room 117
971-722-7488 or 971-722-7246
www.pcc.edu/diesel

CAREER AND PROGRAM DESCRIPTION
The diesel service technician repairs and maintains diesel powered trucks and equipment and their support systems.

The program is designed to prepare students for entry-level positions in diesel service technology. Training is varied to give students a broad understanding and background in the different phases of the diesel service industry. Students have additional cost for tools and books. In addition, the program offers industry upgrade courses.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Diesel Service Technology

Two-Year Certificate
Diesel Service Technology

Less than One-Year Certificate
Diesel Service Technology

PREREQUISITES AND REQUIREMENTS
For Certificates only

Completion of college placement test.

Exit Requirement: All certificate applicants must have completed the following:
1. Completion of WR 80 or placement into WR 90 or higher
2. Completion of RD 80 or placement into RD 90 or higher
3. Completion of MTH 20 or placement into MTH 60 or higher

These courses can be taken before, during or after the student is taking the diesel classes.

DIESEL SERVICE TECHNOLOGY AAS DEGREE
Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Diesel Service Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
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<td>DS 102</td>
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<td>DS 103</td>
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<td>DS 104</td>
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<td>DS 105</td>
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<td>DS 106</td>
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<td>DS 206</td>
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<tr>
<td>WLD 217</td>
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<tr>
<td>Remaining General Education</td>
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</tr>
</tbody>
</table>

DIESEL SERVICE TECHNOLOGY TWO-YEAR CERTIFICATE
Minimum 80 credits. The Diesel Service Technology Two Year Certificate is a related certificate. All courses are contained in the Diesel Service Technology AAS Degree.

Diesel Service Technology Certificate Credit Summary

<table>
<thead>
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<tr>
<td>DS 72</td>
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<td>WLD 3</td>
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<td>CG 1</td>
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Credit Total 80

Diesel Service Technology Certificate Courses

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<th>Credits</th>
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<tr>
<td>CIS 120</td>
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<td>or</td>
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<td>CAS 133</td>
<td>(4)</td>
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<tr>
<td>DS 101</td>
<td>12</td>
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<tr>
<td>DS 206</td>
<td>9</td>
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<tr>
<td>WLD 217</td>
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</tbody>
</table>

DIESEL SERVICE TECHNOLOGY LESS THAN ONE-YEAR CERTIFICATE
Minimum 44 credits. The Diesel Service Technology Certificate is a related certificate. All courses are contained in the Diesel Service Technology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG 209</td>
<td>1</td>
</tr>
<tr>
<td>CIS 120</td>
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<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>CAS 133</td>
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<td>DS 101</td>
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<td>DS 102</td>
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<td>DS 103</td>
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<td>DS 105</td>
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<td>DS 106</td>
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<td>DS 202</td>
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<td>DS 203</td>
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<td>DS 205</td>
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<tr>
<td>DS 206</td>
<td>9</td>
</tr>
<tr>
<td>WLD 217</td>
<td>3</td>
</tr>
</tbody>
</table>

*Could be used as General Education

1 If students take CAS 133 then they will have to take four more credits of general education to meet the general education requirements.
Early Education and Family Studies

Sylvania Campus
Health Technology Building (HT), Room 318
971-722-4217
For Spanish please call 971-722-4853
www.pcc.edu/programs/early-ed/

Career Program and Description

Teachers and home care providers of young children, ages birth through five, plan environments, develop suitable learning experiences, and work closely with families in childhood care education situations. They also supervise play and physical needs of small children, organize daily activities, keep records of children’s progress, and confer with parents. Early education graduates may also work in related fields such as child care resource and referral.

The Early Education and Family Studies (EEFS) coursework is designed to meet the needs of the working student. All coursework for the Certificate and 85% of coursework for the AAS degree can be completed through a combination of courses offered in the evening, on Saturdays and online.

Portland Community College’s early education articulation agreement with Portland State University allows for up to 80 transfer credits toward PSU’s child and family studies degree or degree completion program.

Degrees and Certificates Offered

Associate of Applied Science
Early Education and Family Studies

Less than One-Year Certificate
Early Education and Family Studies

Prerequisites and Requirements

1. College placement test administered through assessment centers.
2. An initial advising/information session with an Early Education Program faculty advisor. Info session schedule available at the EEFS Office.
3. Students entering into the EEFS Program must demonstrate through transcripted record or by appropriate placement test scores the ability to be placed into WR 115 for certificate level course work and completion of WR 121 for AAS degree classes. Math 20 is recommended for Environments (ECE 122).

Exit requirements for the early childhood certificate and the AAS degree in Early Education and Family Studies are as follows: Students must receive a C or better in every required early education class in order to receive a certificate or degree. Students must meet practicum competencies for the certificate and the degree. Students may retake classes in order to meet the grade requirement with the exception of ECE Practicum I (ECE 130, ECE 133), ECE Practicum II (ECE 130, ECE 134), ECE Practicum for Experienced Teachers (ECE 131), and ECE Advanced Practicum (ECE 260, ECE 263, and ECE 264) seminar and lab classes. These classes may be re-enrolled in only once after a student receives a grade of less than C. SAC approval is required for any student desiring to attempt any ECE course for the third time.

A minimum of five credits and a maximum of 10 practicum lab credits are required to meet Practicum I and Practicum II competency levels. Credits required depend on individual student competency as evaluated by EEFS instructors. To be considered for practicum, students must 1) be enrolled in the Oregon Child Care Division, Central Background Registry; 2) submit verification of measles immunization; 3) submit verification of TB Skin Test; and 4) complete a Food Handlers Certificate. Costs associated with required practicum documentation are the sole responsibility of the student.

Criminal Background Check

All PCC students enrolled in a health care or child care program, including Early Education and Family Studies, with requirements for practical experience of field training may have to pass a Criminal History Check (CHC) as a condition of their acceptance into a medical or other facility for training.

Students who do not pass the CHC will be unable to complete some course requirements and will be ineligible to participate in training at affiliated practicum sites, to sit for licensure or certification exams, or be hired for some professional positions. If you believe that your past history may interfere with your ability to complete the program of study or to obtaining licensure, or certification in your chosen field, you should contact the appropriate state board or program director.

The Early Education and Family Studies Program is planned as a career ladder to accommodate the part-time as well as the full-time student. An Early Education and Family Studies certificate provides entry level child care skills and meets the minimum requirements for a child care teacher in an Oregon licensed child care facility. The Associate of Applied Science degree qualifies a student to become a head teacher in a child care facility licensed by the Oregon Child Care Division. The National Association for the Education of Young Children’s (NAEYC) minimum suggested training for teachers in early childhood programs is also an AAS degree in EEFS. All required courses and competencies mastered for the certificate apply to the AAS degree.

Certificate classes may apply toward a CDA credential. CDA and Oregon Registry credentials may articulate into certificate level coursework.
**EARLY EDUCATION AND FAMILY STUDIES AAS DEGREE**

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

### Early Education and Family Studies Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE</td>
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<td>Remaining General Education</td>
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<tr>
<td>HEC</td>
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<td>ECE Degree Electives</td>
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<td>HE</td>
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<tr>
<td>WR</td>
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</table>

*Credit Total 92*

**Early Education and Family Studies Degree Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECE 120 Introduction to Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 121 Observation and Guidance I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 122 Environments and Curriculum in Early Care and Ed I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 123 Environments and Curriculum in Early Care and Ed II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 124 Multicultural Practice: Exploring Our Views</td>
<td>3</td>
</tr>
<tr>
<td>ECE 130 Practicum Seminar</td>
<td>6</td>
</tr>
<tr>
<td>ECE 133 Practicum I Lab</td>
<td>6</td>
</tr>
<tr>
<td>ECE 134 Practicum II Lab</td>
<td>3</td>
</tr>
<tr>
<td>ECE 200 The Professional in Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 221 Observation and Guidance II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 224 Multicultural Practices: Curriculum and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>ECE 234 Children with Special Needs in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE 236 Language and Literacy Development in ECE</td>
<td>3</td>
</tr>
<tr>
<td>ECE 260 Advanced Practicum Seminar</td>
<td>6</td>
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<tr>
<td>ECE 264 Advanced Practicum Lab</td>
<td>8</td>
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<tr>
<td>HE 112 First Aid and Emergency Care</td>
<td>1</td>
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<tr>
<td>HE 262 Children’s Health, Safety, and Nutrition</td>
<td>3</td>
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<tr>
<td>HEC 201 Family Partnership Education</td>
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<tr>
<td>HEC 226 Child Development*</td>
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<td>WR 121 English Composition</td>
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<tr>
<td>ECE Electives</td>
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<tr>
<td>Remaining General Education</td>
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</tbody>
</table>

* *Could be used as General Education*

### Early Education and Family Studies Certificate Core Courses

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
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<tr>
<td>ECE 121 Observation and Guidance I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 122 Environments and Curriculum in Early Care and Ed I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 123 Environments and Curriculum in Early Care and Ed II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 124 Multicultural Practice: Exploring Our Views</td>
<td>3</td>
</tr>
<tr>
<td>ECE 130 Practicum Seminar</td>
<td>4</td>
</tr>
<tr>
<td>ECE 133 Practicum I Lab</td>
<td>3</td>
</tr>
<tr>
<td>ECE 134 Practicum II Lab</td>
<td>3</td>
</tr>
<tr>
<td>HEC 201 Family Partnerships in Education</td>
<td>3</td>
</tr>
<tr>
<td>HE 262 Children’s Health, Nutrition and Safety</td>
<td>3</td>
</tr>
<tr>
<td>HE 112 First Aid and Emergency Care</td>
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</tr>
</tbody>
</table>

A minimum of five and a maximum of 10 practicum lab credits are required to meet Practicum I and Practicum II competency levels. Credits required depend on individual student competence as evaluated by ECE instructors.

1 Students with a valid CPR card may receive non-traditional credit.

2 Students must enroll in practicum seminar each term they take practicum.

### Early Education and Family Studies Degree Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 177 Payroll Accounting</td>
<td>3</td>
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<tr>
<td>BA 223 Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 224 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 250 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 285 Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120 Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 170 Coaching and Mentoring in Early Education and Family Studies</td>
<td>1</td>
</tr>
<tr>
<td>ECE 173 Children and Loss: The Effects of Death and Divorce</td>
<td>1</td>
</tr>
<tr>
<td>ECE 174 Head Start Past and Present</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175A Infant/Toddler Caregiving: Learning and Development</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175B Infant/Toddler Caregiving: Group Care</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175C Infant/Toddler Caregiving: Social/Emotional Growth</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175D Infant/Toddler Caregiving: Family/Provider Relationships</td>
<td>1</td>
</tr>
<tr>
<td>ECE 177 Tiny to Tall: Making Mixed Age Groupings Work</td>
<td>1</td>
</tr>
<tr>
<td>ECE 179 The Power of Portfolios in Early Education</td>
<td>1</td>
</tr>
<tr>
<td>ECE 184 Children’s Puppetry and Theater</td>
<td>1</td>
</tr>
<tr>
<td>ECE 185 Planning Fun and Meaningful Field Trips for Young Children</td>
<td>1</td>
</tr>
<tr>
<td>ECE 197 Career Exploration in Early Education and Family Studies</td>
<td>1</td>
</tr>
<tr>
<td>ECE 198 Building Effective Outdoor Environments</td>
<td>1</td>
</tr>
<tr>
<td>ECE 235 Music and Movement in Early Childhood Education</td>
<td>1</td>
</tr>
<tr>
<td>ECE 238 Administration of Early Childhood Programs</td>
<td>3</td>
</tr>
<tr>
<td>ED 102 Displays and Graphics for Educators</td>
<td>3</td>
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<tr>
<td>ED 112 Introduction to Children’s Literature</td>
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<tr>
<td>ED 115 Storytelling</td>
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<tr>
<td>ED 131 Applied Learning Theory</td>
<td>3</td>
</tr>
<tr>
<td>ED 136 Computers in Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 200 Intro to Education for Paraeducators</td>
<td>4</td>
</tr>
</tbody>
</table>

### EARLY EDUCATION AND FAMILY STUDIES LESS THAN ONE-YEAR CERTIFICATE

Minimum 34 credits. Students must meet certificate requirements.

**Early Education and Family Studies Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECE</td>
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<td>HEC</td>
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<tr>
<td>HE</td>
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</tbody>
</table>

*Credit Total 34*
ED 260  Multicultural Literature for Children and Young Adults  3
ED 268  Intro to Developmental Disabilities  3
ED 269  Intro to Teaching the Learning Disabled Students  3
ESR 171  Environmental Science: Biological Perspectives*  4
ESR 172  Environmental Science: Chemical Perspectives*  4
MTH 211  Foundations of Elementary Math I*  4
PSY 222  Family and Intimate Relationships*  4
PSY 240  Personal Awareness and Growth*  4
SOC 213  Diversity in the United States*  4
SOC 214A  Illumination Project: Tools for Creative Social Activism I*  4
SOC 214B  Illumination Project: Tools for Creative Social Activism*  4
SOC 214C  Illumination Project: Tools for Creative Social Activism*  4
SOC 218  Sociology of Gender*  4
SP 100  Intro to Speech Communication*  4
WR 122  English Composition  4
Up to 3 credits of American Sign Language
Up to 3 credits of Foreign Language
Up to 3 credits of ESOL

ECONOMICS

Cascade Campus
Student Center (SC), Room 211
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7327

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4289

DESCRIPTION
Economics is the study of how societies allocate their scarce resources. It examines individual and social action related to the use of limited resources toward the production, distribution, and consumption of goods and services. Economics students may complete two-year education programs, as well as transfer to four-year colleges and universities. Students may advance toward careers in both public and private sectors, and will actively engage in a wide range of economic, social and political processes.

Courses at PCC introduce students to economics and prepare students for transfer into upper division courses. The transfer sequence consists of EC 201 Microeconomics and EC 202 Macroeconomics. Students are recommended to take EC 201 first. PCC also offers other economics courses, see the Course Description (EC prefix) section of this catalog for individual courses and course prerequisites.

EDUCATION

Cascade Campus
Technology Education Building (TEB), Room 209
971-722-5191, 971-722-5229 or 971-722-5430
www.pcc.edu/ed

CAREER AND PROGRAM DESCRIPTION
PCC’s Education Department offers a Paraeducator Degree and Certificate, Library/Media Assistant Certificate, in addition to Teacher Relicensing and Elementary Education Transfer courses. These programs are designed to prepare students who wish to work in a variety of educational and library settings.

The Paraeducator degree and certificate are designed for those who would like to work as Instructional Assistants in educational settings. They prepare students to resolve everyday challenges and to professionally support teachers in planning, presenting and evaluating instruction and learning. The Paraeducator’s responsibilities may include assisting small group instruction in reading, math, English language development, assisting individual students in the above academic areas and self-help skills, daily living skills, following behavior programs as directed by the teacher, and preparing and assembling materials. The particular responsibilities assigned to a Paraeducator (instructional assistant) depend on the program and personnel in each school. Employment opportunities exist in Portland and in surrounding areas as a result of the present legislative support for equal education for students with special needs. The program is designed for persons of all ages, races, cultures and economic backgrounds. The program values and encourages diversity in the field of education. This is an Oregon Department of Education approved statewide program that meets the requirements of No Child Left Behind for “highly qualified” status.

The Library/Media Assistant Certificate prepares graduates to qualify for jobs in school libraries, public libraries and corporate libraries. Employment opportunities exist throughout the greater metropolitan area. The library/media assistant works in all aspects of library and media center operations including technical processing, circulation procedures and reference materials, literature and literature promotion, computer applications and operations such as multimedia, publishing, database and spreadsheet development and maintenance, and communication with the public.

The Library/Media Assistant Certificate offers students the ability to select from two options:

1. A less than one-year certificate program that develops skills used in school, public and corporate libraries and media centers. Two terms of practicum are included.

2. An Associate of General Studies Degree. Students take a combination of 45-60 credits from option one, plus 16 credits of General Education in order to complete the 90 credits necessary to receive an associate degree. Students completing the two-year option have varied experiences in the field of libraries, media centers, and audio-visual departments. Each student’s program must be approved by the Education Dept.

Education courses may also be applied to the 90 credits required for an Associate of General Studies Degree. See a program advisor for information about transferring to a four-year institution. Many classes will be available via distance learning during the
year. Please refer to the quarterly schedule or contact education faculty for details.

Elementary Education transfer students are allowed to take up to 9 credits from the Education Department as general electives without being admitted into the program. Students will be expected to meet the same prerequisite in writing and be in good academic standing. Students interested in elementary education may wish to pursue an Associate of Arts Oregon Transfer Degree, transferable to four-year public universities and colleges in Oregon. Contact an Education Department advisor for more information. ED 224 is recognized as transferable to teacher education programs statewide. Students should check with the institution to which they will be transferring regarding the transferability of other Education Department courses.

Teacher relicensing candidates may use PCC education courses to meet state requirements. Contact Oregon Teacher Standards and Practices Commission at 503-378-3586 or www.tspc.state.or.us for specific requirements. Interested students should also contact an Education Department advisor. Education Courses numbered 101 or higher may generally be used for relicensing. See Course Description (ED prefix) section for a complete listing of ED courses.

PCC’s Education Department works in conjunction with Northwest Regional Educational Service District (NWRESD) and Multnomah Educational Service District (MESD) Outdoor School to offer students the opportunity to gain experience while working with sixth-grade students in an outdoor school setting. For more information contact the Education Department or the NWRESD or MESD Outdoor School Departments.

DEGREES AND CERTIFICATES OFFERED

**Associate of Applied Science Degree**  
Paraeducator

**One-Year Certificate**  
Paraeducator

**Less than One-Year Certificate**  
Library/Media Assistant

PREREQUISITES AND REQUIREMENTS

Admission to the Paraeducator or Library Media Programs requires an interview and application. Please contact an education advisor to pick up application materials and to set an appointment for the initial interview. When completing the application process, please bring photocopies of transcripts and the completed application form to the education department for review.

Students are required to demonstrate competencies in writing, reading, mathematics and computer literacy (students must complete CAS 121 and CAS 133 or pass competencies).

Check individual courses for prerequisite or basic competencies required. Many courses require placement test scores high enough to qualify students for enrollment in WR 121 and/or MTH 65. Students may have to be fingerprinted and submit a criminal background check prior to practicum experiences in public schools. Students may enter the program at any point during the year. It is recommended that Paraeducator Degree and Certificate students take ED 100 near the start of their studies and take ED 263 as a capstone course at the end. Students should be mindful that although completion of MTH 65 is not a program requirement completion of MTH 65 or placement into MTH 95 is a comprehensive degree requirement.

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### PARAEDUCATOR AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

<table>
<thead>
<tr>
<th>Paraeducator Degree Credit Summary</th>
<th></th>
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<tbody>
<tr>
<td>ED 100</td>
<td>Introduction to Education</td>
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<tr>
<td>ED 102</td>
<td>Displays and Graphics for Educators</td>
</tr>
<tr>
<td>ED 123</td>
<td>Instructional Strategies: Reading</td>
</tr>
<tr>
<td>ED 124</td>
<td>Instructional Strategies: Math and Science</td>
</tr>
<tr>
<td>ED 131</td>
<td>Applied Learning Theory</td>
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<td>ED 136</td>
<td>Computers in Education</td>
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<tr>
<td>ED 217</td>
<td>Classroom Management</td>
</tr>
<tr>
<td>ED 252</td>
<td>Behavior Management</td>
</tr>
<tr>
<td>ED 224</td>
<td>Foundations of Education</td>
</tr>
<tr>
<td>ED 251</td>
<td>Overview of Exceptional Learners</td>
</tr>
<tr>
<td>ED 258</td>
<td>Multicultural Education: Principles</td>
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<td>ED 259</td>
<td>Multicultural Education: Applications</td>
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<td>ED 263</td>
<td>Portfolio Development</td>
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<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
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<td>ED 269</td>
<td>Introduction to Teaching the Learning Disabled</td>
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<td>ED 270</td>
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<td>Practicum II</td>
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<td>ED 290</td>
<td>Sheltered Instruction for English Language Learners</td>
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<td>ED 291</td>
<td>Bilingual and ESL Strategies</td>
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<td>PSY 215</td>
<td>Human Development</td>
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<td>WR 121</td>
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<td>Education Specialization Electives</td>
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</tbody>
</table>

*Could be used as General Education

1 Only two courses are required.

2 Only two courses are required.

3 Math 211 may be substituted

4 Any course from the General Education list. Must include a minimum of four credits from each category

### Education Specialization Electives

| ED 103 | Desktop Publishing for Educators | 3 |
| ED 104 | Multimedia for Educators | 3 |
| ED 109 | Library Procedures | 3 |
| ED 111 | Selection of Library Materials | 3 |
| ED 112 | Introduction to Children's Literature | 3 |
| ED 114 | Reference Materials | 3 |
| ED 115 | Storytelling | 2 |
| ED 116 | Literature for Adolescence and Young Adults | 3 |
LIBRARY/MEDIA ASSISTANT
LESS THAN ONE-YEAR CERTIFICATE
Minimum 44 credits hours. Students must meet certificate requirements.

Library/Media Assistant Certificate Credit Summary
ED 44
Credit Total 44

Library/Media Assistant Certificate Courses
ED 102 Displays and Graphics for Educators 3
ED 103 Desktop Publishing for Educators 3
ED 104 Multimedia for Educators 3
ED 109 Library Procedures 3
ED 111 Selection of Library Materials 3
ED 112 Introduction to Children’s Literature 3
ED 114 Reference Materials 3
ED 115 Storytelling 2
ED 116 Literature for Adolescence and Young Adults 2
ED 136 Computers in Education 3
ED 171 Computers in Education II 3
ED 206 Seminar: Advanced Education Technologies 3
ED 224 Foundations of Education 3
ED 260 Multicultural Literature for Children and Young Adults 3
ED 270 Practicum I 2
ED 271 Practicum II 2
ED 272 Practicum III 2

1 Only two of the three literature courses are required.
2 Only two of the three practicums are required.

ELECTRICAL TRADES
SEE APPRENTICESHIP

ELECTRONIC ENGINEERING TECHNOLOGY
Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4159
www.pcc.edu/eet

CAREER AND PROGRAM DESCRIPTION
Electronic Engineering Technology (EET) is concerned with the theory and practice of applied electronics engineering. Emphasis is placed on the practical application of engineering knowledge. To apply electronics engineering knowledge requires a thorough background in mathematics and science. EET graduates possess a combination of theoretical and practical understanding and require minimal on-the-job training to become productive. Graduates of an Associate of Applied Science Degree program in EET are called electronic engineering technicians and find employment in circuits and systems testing, product development, prototype construction and testing, circuit and systems medication, systems operation and manufacturing. EET graduates are expected to have good communication skills and be capable of

Paraeducator Certificate Credit Summary
ED 47
PSY 4
Credit Total 51

Paraeducator Certificate Courses
ED 100 Introduction to Education 3
ED 102 Displays and Graphics for Educators 3
ED 123 Instructional Strategies: Reading 3
ED 124 Instructional Strategies: Math and Science 3
ED 131 Applied Learning Theory 3
ED 136 Computers in Education 3
ED 217 Classroom Management 3
or
ED 252 Behavior Management (3)
ED 224 Foundations of Education 3
ED 251 Overview of Exceptional Learners 3
ED 258 Multicultural Education: Principles 3
ED 259 Multicultural Education: Applications 3
ED 263 Portfolio Development 3
ED 268 Introduction to Developmental Disabilities (3)
ED 269 Introduction to Teaching the Learning Disabled 3
ED 270 Practicum I 3
ED 271 Practicum II 3
ED 290 Sheltered Instruction for English Language Learners 3
ED 291 Bilingual and ESL Strategies (3)
PSY 215 Human Development 4

1 Only two courses are required.
2 Only two courses are required.
3 Math 211 may be substituted
creative problem solving, working independently and in teams. They should have extensive knowledge of both the hardware and software of electronic systems.

Employers of EET engineering technicians include research and development laboratories, electronic equipment manufacturers, public utilities, colleges and universities, government agencies, medical laboratories and hospitals, electronic equipment distributors, semiconductor manufacturers and manufacturing and processing industries that use electronic control equipment and others.

Students can complete the EET degree and/or the EET options in Biomedical Engineering Technology, Wireless and Data Communications, Renewable Energy Systems, and Mechatronics/Automation/Robotics Engineering Technology. Following is an outline of the EET degrees/certificates.

**DEGREES AND CERTIFICATES OFFERED**

- **Associate of Applied Science Degree**
  - Electronic Engineering Technology
  - Electronic Engineering Technology: Biomedical Engineering Technology Option
  - Electronic Engineering Technology: Mechatronics/Automation/Robotics Engineering Technology Option
  - Electronic Engineering Technology: Renewable Energy Systems Option
  - Electronic Engineering Technology: Wireless and Data Communications Engineering Technology Option

- **One-Year Certificate**
  - Electronic Engineering Technology

- **Less Than One-Year: Career Pathway Certificate**
  - Renewable Energy Systems

**PREREQUISITES AND REQUIREMENTS**

All students must have an advising interview with an EET advisor. Basic computer skills in the Windows operating system, word processing and spreadsheets are required. Prerequisites and requirements vary depending upon the degree or certificate.

**Electronic Engineering Technology AAS Degree**

1. Completion of WR 121
2. Placement into MTH 111 or higher

**Biomedical Engineering Technology AAS Degree**

1. Completion of WR 121
2. Placement into MTH 111 or higher

The following must be completed prior to beginning the second year.

3. Completion of any medical terminology course 3 credits or higher.
4. Completion of (BI 121 and 122) or (BI 231, 232, 233)

**Mechatronics/Automation/Robotic Engineering Technology AAS degree**

1. Completion of WR 121

2. Placement into MTH 111 or higher
3. Completion of CS 161

**Renewable Energy Systems AAS Degree**

1. Completion of WR 121
2. Placement into MTH 111 or higher
3. Completion of any medical terminology course 3 credits or higher.
4. Completion of (BI 121 and 122) or (BI 231, 232, 233)

**Wireless and Data Communications Engineering Technology AAS Degree**

1. Completion of WR 121
2. Placement into MTH 111 or higher

**Electronic Engineering Technology Certificate**

1. Completion of WR 121
2. Placement into MTH 111 or higher

**Renewable Energy Systems Certificate**

1. Completion of WR 121
2. Placement into MTH 111 or higher

Full-time and Part-Time EET students: A day program starts in the fall and a late afternoon/evening program starts in the winter.

Students can transfer classes from the EET degree into any BSEE. The Electronic Engineering AAS and its options and certificates transfer into Oregon Institute of Technology’s BSEE degree. Please check with the department for details.

Job-upgrade students: Students who want to upgrade their job skills must meet individual course prerequisites and complete an advising interview with an EET advisor prior to enrollment. Admission is granted on a space available basis after the needs of the degree/certificate seeking full-time and part-time students are met.

**ELECTRONIC ENGINEERING TECHNOLOGY AAS DEGREE**

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Electronic Engineering Degree Credit Summary**

- **EET** 64
- **PHY** 12
- **MTH** 15
- **Remaining General Education** 6
- **CS** 4

**Credit Total 101**

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>Intro to Electronic Testing</td>
</tr>
<tr>
<td>EET 111</td>
<td>Electrical Circuit Analysis I</td>
</tr>
<tr>
<td>EET 121</td>
<td>Digital Systems I</td>
</tr>
<tr>
<td>MTH 111</td>
<td>College Algebra*</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 112</td>
<td>Electrical Circuit Analysis II</td>
</tr>
<tr>
<td>EET 122</td>
<td>Digital Systems II</td>
</tr>
</tbody>
</table>
BIOMEDICAL ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 102 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Biomedical Engineering Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
<td>74</td>
</tr>
<tr>
<td>MTH</td>
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<tr>
<td>Remaining General Education</td>
<td>6</td>
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<tr>
<td>EET/CIS</td>
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</tr>
<tr>
<td>CIS</td>
<td>4</td>
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<td>CS</td>
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COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>Intro to Electronic Testing Equipment Soldering/Tools</td>
</tr>
<tr>
<td>EET 111</td>
<td>Electric Circuit Analysis I</td>
</tr>
<tr>
<td>EET 121</td>
<td>Digital Systems I</td>
</tr>
<tr>
<td>MTH 111</td>
<td>College Algebra*</td>
</tr>
<tr>
<td>General Education</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 112</td>
<td>Electric Circuit Analysis II</td>
</tr>
<tr>
<td>EET 122</td>
<td>Digital Systems II</td>
</tr>
<tr>
<td>EET 188</td>
<td>Industrial Safety</td>
</tr>
<tr>
<td>MTH 112</td>
<td>Elementary Functions*</td>
</tr>
<tr>
<td>General Education</td>
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Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 133U</td>
<td>C Programming*</td>
</tr>
<tr>
<td>EET 113</td>
<td>Electrical Power</td>
</tr>
<tr>
<td>EET 123</td>
<td>Digital Systems III</td>
</tr>
<tr>
<td>EET 178</td>
<td>PC Architecture for Technicians</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>5</td>
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</tbody>
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Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 221</td>
<td>Semiconductor Devices and Circuits</td>
</tr>
<tr>
<td>EET 241</td>
<td>Microcomputer Systems</td>
</tr>
<tr>
<td>MTH 243</td>
<td>Statistics I*</td>
</tr>
<tr>
<td>PHY 201</td>
<td>General Physics*</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 222</td>
<td>Operational Amplifier Circuits</td>
</tr>
<tr>
<td>EET 242</td>
<td>Microcontroller Systems</td>
</tr>
<tr>
<td>EET 254</td>
<td>EET Seminar</td>
</tr>
<tr>
<td>EET 272</td>
<td>Motors and Generators</td>
</tr>
<tr>
<td>PHY 202</td>
<td>General Physics*</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
</table>

Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 223</td>
<td>RF Communications Circuits</td>
</tr>
<tr>
<td>EET 273</td>
<td>Electronic Control Systems</td>
</tr>
<tr>
<td>EET 256</td>
<td>Electronic Capstone Project</td>
</tr>
<tr>
<td>EET 280A</td>
<td>CE: Electronics Engineering Technology</td>
</tr>
<tr>
<td>PHY 203</td>
<td>General Physics*</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Recommended General Education:
PHL 202, PHL 205, PHL 206, PHL 209, PSY 101, PSY 214, PSY 215, PSY 216, PSY 240, SP 111 (required by OIT), SP 140, SP 227, SP 228, SP 237, SOC 205, SOC 206, SOC 211, SOC 213, WR 222

MECHATRONICS/AUTOMATION/ROBOTICS ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Mechatronics/Automation/Robotics Engineering Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET</td>
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<tr>
<td>PHY</td>
<td>12</td>
</tr>
<tr>
<td>MTH</td>
<td>10</td>
</tr>
<tr>
<td>CMET</td>
<td>3</td>
</tr>
<tr>
<td>CS</td>
<td>4</td>
</tr>
<tr>
<td>ELT</td>
<td>6</td>
</tr>
<tr>
<td>MARET Degree Electives</td>
<td>3</td>
</tr>
<tr>
<td>MCH</td>
<td>4</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>6</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
</table>
**Programs & Disciplines**

**Renewable Energy Systems AAS Degree**

Minimum 107 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Recommended General Education:**
- PHL 202, PHL 205, PHL 206, PHL 209, PSY 101, PSY 214, PSY 215, PSY 216, PSY 240, SP 111 (required by OIT), SP 140, SP 227, SP 228, SP 237, SOC 205, SOC 206, SOC 211, SOC 213, WR 222

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

### First Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>Intro to Electronic Testing Equipment Soldering/Tools</td>
<td>1</td>
</tr>
<tr>
<td>EET 111</td>
<td>Electrical Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td>EET 121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 111</td>
<td>College Algebra*</td>
<td>5</td>
</tr>
<tr>
<td>PHY 201</td>
<td>General Physics*</td>
<td>4</td>
</tr>
</tbody>
</table>

### Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 112</td>
<td>Electrical Circuit Analysis II</td>
<td>5</td>
</tr>
<tr>
<td>EET 122</td>
<td>Digital Systems II</td>
<td>4</td>
</tr>
<tr>
<td>EET 188</td>
<td>Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>MTH 112</td>
<td>Elementary Functions*</td>
<td>5</td>
</tr>
<tr>
<td>PHY 202</td>
<td>General Physics*</td>
<td>4</td>
</tr>
</tbody>
</table>

### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 162</td>
<td>Computer Science II*</td>
<td>4</td>
</tr>
<tr>
<td>EET 113</td>
<td>Electrical Power</td>
<td>5</td>
</tr>
<tr>
<td>EET 123</td>
<td>Digital Systems III</td>
<td>4</td>
</tr>
<tr>
<td>PHY 203</td>
<td>General Physics*</td>
<td>4</td>
</tr>
</tbody>
</table>

### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>EET 221</td>
<td>Semiconductor Devices and Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 241</td>
<td>Microcomputer Systems</td>
<td>4</td>
</tr>
<tr>
<td>ELT 125</td>
<td>Basic PLC (PC Based)</td>
<td>2</td>
</tr>
<tr>
<td>MCH 121</td>
<td>Manufacturing Processes I</td>
<td>4</td>
</tr>
</tbody>
</table>

### Fifth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 222</td>
<td>Operational Amplifier Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 242</td>
<td>Microcontroller Systems</td>
<td>4</td>
</tr>
<tr>
<td>EET 254</td>
<td>EET Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EET 272</td>
<td>Motors and Generators</td>
<td>3</td>
</tr>
<tr>
<td>ELT 126</td>
<td>Intermediate PLC (PC Based)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>3</td>
</tr>
</tbody>
</table>

### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 223</td>
<td>RF Communication Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 273</td>
<td>Electronic Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>EET 256</td>
<td>Electronic Capstone Project</td>
<td>2</td>
</tr>
<tr>
<td>or EET 280A</td>
<td>CE: Electronic Engineering Technology (2)</td>
<td></td>
</tr>
<tr>
<td>ELT 225</td>
<td>Advanced PLC (PC Based)</td>
<td>2</td>
</tr>
<tr>
<td>MCH 121</td>
<td>MARET Degree Electives</td>
<td>3</td>
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<tr>
<td></td>
<td>General Education</td>
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</tbody>
</table>

*Could be used as General Education

**Mechatronics/Automation/Robotics Engineering Technology (MARET) Degree Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 113</td>
<td>Engineering Tech Graphics</td>
<td>3</td>
</tr>
<tr>
<td>DRF 126</td>
<td>Introduction to AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>DRF 270</td>
<td>SolidWorks Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>EET 178</td>
<td>PC Architecture for Technicians</td>
<td>4</td>
</tr>
<tr>
<td>MCH 158</td>
<td>Project Machine Technology II</td>
<td>3</td>
</tr>
<tr>
<td>MT 101</td>
<td>Introduction to Semiconductor Manufacturing</td>
<td>1</td>
</tr>
<tr>
<td>MT 102</td>
<td>Introduction to Semiconductor Devices</td>
<td>1</td>
</tr>
<tr>
<td>MT 104</td>
<td>Introduction to Solar Votlaic Processing</td>
<td>1</td>
</tr>
<tr>
<td>MT 222</td>
<td>Quality Control Methods In Manufacturing</td>
<td>3</td>
</tr>
</tbody>
</table>

Please check with the department for advice with electives for the following areas: general manufacturing, semiconductor/solar manufacturing, etc.
WIRELESS AND DATA COMMUNICATIONS ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 98 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Wireless and Data Communications Engineering Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
<td>58</td>
</tr>
<tr>
<td>MTH</td>
<td>15</td>
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<tr>
<td>CIS</td>
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<td>CS</td>
<td>4</td>
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<td>Remaining General Education</td>
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<tr>
<td><strong>Credit Total</strong></td>
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</tbody>
</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>Term</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td>EET 101 Intro to Electronic Testing Equipment</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>EET 111 Electric Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 121 Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MTH 111 College Algebra*</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td>EET 112 Electric Circuit Analysis II</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 122 Digital Systems II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EET 188 Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MTH 112 Elementary Functions*</td>
<td>5</td>
</tr>
<tr>
<td><strong>Third Term</strong></td>
<td>CS 133U C Programming*</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EET 113 Electric Power</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 123 Digital Systems III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EET 178 PC Architecture for Technicians</td>
<td>4</td>
</tr>
<tr>
<td><strong>Fourth Term</strong></td>
<td>EET 221 Semiconductor Devices and Circuits</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 241 Microcomputer Systems</td>
<td>4</td>
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<td>MTH 243 Statistics I</td>
<td>5</td>
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<tr>
<td></td>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Fifth Term</strong></td>
<td>CIS 179 Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CIS 188 Introduction to Wireless Network</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EET 222 Op-Amp Circuits</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 242 Microcontroller Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>EET 254 EET Seminar</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sixth Term</strong></td>
<td>CIS 189 Wireless Security</td>
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<tr>
<td></td>
<td>CIS 278 Data Communication Concepts II</td>
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<tr>
<td></td>
<td>EET 223 RF Communications Circuits</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 256 Electronic Capstone Project</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>or EET 280A CE: Electronic Engineering Technology</td>
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<tr>
<td></td>
<td><strong>Credit Total</strong></td>
<td><strong>99</strong></td>
</tr>
</tbody>
</table>

First Year Certificate

Minimum 49 credits. Students must meet certificate requirements. The Electronic Engineering Technology Certificate is a related certificate. All courses are contained in the Electronic Engineering Technology AAS Degree.

Electronic Engineering Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET</td>
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<td>CS</td>
<td>4</td>
</tr>
<tr>
<td><strong>General Education</strong></td>
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<tr>
<td><strong>Credit Total</strong></td>
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</tbody>
</table>
COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
<td>101</td>
<td>Intro to Electronic Testing Equipment</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soldering/Tools</td>
<td>1</td>
</tr>
<tr>
<td>EET</td>
<td>111</td>
<td>Electrical Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td>EET</td>
<td>121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MTH</td>
<td>111</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>EET</td>
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<td>Electrical Circuit Analysis II</td>
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<td>Digital Systems II</td>
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<td>EET</td>
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<td>Industrial Safety</td>
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<tr>
<td>MTH</td>
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<td>Elementary Functions</td>
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General Education ²

Third Term

<table>
<thead>
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<th>Course</th>
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<th>Credits</th>
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<td>CS</td>
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<tr>
<td>EET</td>
<td>113</td>
<td>Electrical Power</td>
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</tr>
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<td>EET</td>
<td>123</td>
<td>Digital Systems III</td>
<td>4</td>
</tr>
<tr>
<td>EET</td>
<td>178</td>
<td>PC Architecture for Technicians</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ CS 161 may be substituted (required by OIT)

² Course must be from the Social Science area.

RENEWABLE ENERGY SYSTEMS:
CAREER PATHWAY CERTIFICATE

Minimum 42 credits. Students must meet certificate requirements. The Renewable Energy Systems Certificate is a Career Pathway. All courses are contained in the Renewable Energy Systems AAS Degree.

Renewable Energy Systems Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
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<tr>
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<td>MTH</td>
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<td>Credit Total</td>
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COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
<td>101</td>
<td>Intro to Electronic Testing Equipment</td>
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<tr>
<td></td>
<td></td>
<td>Soldering/Tools</td>
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</tr>
<tr>
<td>EET</td>
<td>110</td>
<td>Intro to Renewable Energy ¹</td>
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<tr>
<td>EET</td>
<td>111</td>
<td>Electric Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td>EET</td>
<td>121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MTH</td>
<td>111</td>
<td>College Algebra</td>
<td>5</td>
</tr>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
<td>112</td>
<td>Electric Circuit Analysis II</td>
<td>5</td>
</tr>
<tr>
<td>EET</td>
<td>122</td>
<td>Digital Systems II</td>
<td>4</td>
</tr>
<tr>
<td>EET</td>
<td>188</td>
<td>Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>ELT</td>
<td>125</td>
<td>Basic PLC (PC Based)</td>
<td>2</td>
</tr>
<tr>
<td>MTH</td>
<td>112</td>
<td>Elementary Functions</td>
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Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
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<td>Electrical Power</td>
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¹ REE 201 at OIT can substitute for EET 110

Renewable Energy Systems Program Electives

<table>
<thead>
<tr>
<th>Wind Power</th>
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<tbody>
<tr>
<td></td>
<td>EET</td>
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Solar Manufacturing:

<table>
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<tbody>
<tr>
<td>MT</td>
<td>101</td>
<td>Introduction to Semiconductor Manufacturing</td>
<td>1</td>
</tr>
<tr>
<td>MT</td>
<td>102</td>
<td>Introduction to Semiconductor Devices</td>
<td>1</td>
</tr>
<tr>
<td>MT</td>
<td>104</td>
<td>Introduction to Solar Voltaic Processing</td>
<td>1</td>
</tr>
</tbody>
</table>

² RET 122 of CGCC can be used as an elective

EMERGENCY MANAGEMENT

Cascade Campus
Public Services Education Building (PSEB), Room 133
971-722-5530
www.pcc.edu/programs/emergency-mgmt/

CAREER AND PROGRAM DESCRIPTION

Emergency Managers are expected to have a broad range of knowledge as they face the varied threats to our modern society and our personal safety. Today’s threats include natural disasters, technological threats and terrorism in its many forms. Expertise in emergency management is needed at every level of government and in the private sector. This broad range of knowledge comes from education and on the job experiences. Emergency Managers must have a knowledge base of hazards, disasters, planning, science, history and research methods, communications and management. The profession requires diverse skills including a focused education in the areas of history of hazards and mitigation, emergency planning, disaster and recovery operations, technology and effective critical thinking, communications, problem solving and leadership. On the job, an Emergency Manager is responsible for coordinating disaster response or crisis management activities. They must provide disaster preparedness training, create and design emergency plans and procedures and direct emergency response operations.

PREREQUISITES AND REQUIREMENTS

Students must pass all prerequisites with a C or better in order to enroll in any EM courses with a “200” or higher designator.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree

Emergency Management

Less than One-Year: Career Pathway Certificate

Emergency Management

EMERGENCY MANAGEMENT AAS DEGREE

Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.
Emergency Management Degree Credit Summary
EM 44
EM Program Electives 12
Remaining General Education 8
HUM 4
PHL 4
PS 4
PSY 4
SP 4
WR 4
ETC 3
CJA 3
MSD 3
Credit Total 97

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
CJA 101 Cultural Diversity in CJ Professions 3
EM 101 Introduction to Emergency Services 4
EM 110 Theory of Emergency Management 3
EM 114 History of US Hazards, Disasters and Emergency Management 4
Emergency Management Program Electives 4

Second Term
EM 103 Intro to Radio Communications 3
EM 203 Principles and Practices of Disaster Response I 4
PHL 191 Critical Thinking: Language and Layout of Argument* 4
PS 203 State and Local Government* 4
General Education 4

Third Term
EM 202 Principles and Practices of Hazard Mitigation 3
EM 204 Principles and Practices of Disaster Response II 4
ETC 105 Crisis Intervention and Critical Incident Stress Management 3
HUM 221 Leadership Development* 4
Emergency Management Program Electives 4

Fourth Term
EM 210 Emergency Mgmt Planning: Hazards and Disasters 4
EM 211 Public Policy and Law in Emergency Management 3
MSD 101 Principles of Management and Supervision 3
SP 111 Public Speaking* 4

Fifth Term
EM 205 Disaster Recovery Operations 3
EM 221 Business Continuity/Resumption of Operations Planning 3
PSY 101 Psychology and Human Relations* 4
WR 227 Technical and Professional Writing I 4

Sixth Term
EM 222 Disaster Exercise Design and Evaluation 3
EM 223 Terrorism 3
Emergency Management Program Electives 4
General Education 4
*Could be used as General Education

EMERGENCY MANAGEMENT:
CAREER PATHWAY CERTIFICATE
Minimum 44 credits. Students must also meet certificate requirements. The Emergency Management Certificate is a Career Pathway. All courses are contained in the Emergency Management AAS Degree.

EM 101 Introduction to Emergency Services 4
EM 110 Theory of Emergency Management 3
EM 114 History of US Hazards, Disasters and Emergency Management 4
EM 202 Principles and Practices of Hazard Mitigation 3
EM 203 Principles and Practices of Disaster Response I 4
EM 204 Principles and Practices of Disaster Response II 4
EM 205 Disaster Recovery Operations 3
ETC 105 Crisis Intervention and Critical Incident Stress Management 3
Emergency Management Program Electives 16

EMERGENCY MANAGEMENT Program Electives
FP 9070 Major Emergency Tactics/Strategies 3
G 201 Physical Geology* 4
G 208 Volcanoes and Their Activity* 3
G 209 Earthquakes* 3
GEO 105 Introduction to Human Geography* 4
GEO 106 Geography of the Developed World* 4
GEO 209 Physical Geography: Weather and Climate* 4
GEO 210 The Natural Environment* 4
GS 109 Physical Science (Meteorology) 4
MSD 121 Leadership Skill Development 3

Any pre-approved CJA, EMS, ETC or FP courses may be used to fill the elective requirement.

EMERGENCY MEDICAL SERVICES
Cascade Campus
Public Services Education Building (PSEB), Room 133
971-722-5530; Fax 971-722-5535
www.pcc.edu/em

CAREER AND PROGRAM DESCRIPTION
The Emergency Medical Services Department offers career training for entry-level positions in emergency medical settings. Ambulance companies, fire departments, police departments, and various other industries requiring emergency medical services may employ EMS Providers. After successful completion of all requirements for EMT, AEMT, Intermediate, or Paramedic training, the student is eligible to apply to take the respective state certification exams. Other emergency medical training offered includes First Responder/Emergency Medical Responder and EMS continuing education.
The Emergency Medical Services Department trains and educates EMS professionals to excel in meeting the needs of the community. EMS Providers respond to medical emergencies by providing immediate care and transportation to the ill and injured. This department combines classroom lectures, hands-on skill labs and appropriate cooperative clinical and field experience to provide students with cognitive, psychomotor and affective competence to function as effective EMS providers.

DEGREES AND CERTIFICATES OFFERED

**Associate of Applied Science Degree**
Emergency Medical Technician-Paramedic

**Two-Year Certificate**
Emergency Medical Services

**PREREQUISITES AND REQUIREMENTS**

1. Placement test scores within the last three years or transcript with course completion. Placement into WR 121 or completion of WR 115 with a grade of C or better. Placement into MTH 60, or completion of MTH 20 with a grade of C or better. Placement into RD 115, or completion of RD 90 with a grade of C or better.

2. Must have completed high school or GED.

3. Must be a minimum of 18 years of age.

4. Must have documented results of: TB exam (within 6 months), MMR (measles immunity) if born after 12-31-56, Tdap (within past 10 years), Hepatitis B immunization series started, Varicella (chicken pox immunity), influenza (one dose each fall/winter for students receiving placements during the flu season).

5. AHA Healthcare Provider BLS (CPR) card current through certification testing.

Applicants for EMS courses must meet all prerequisites prior to registration into EMS courses. Satisfactory Criminal History Background check and drug screening will be mandatory to qualify for clinical rotations and state certification. The cost for Criminal History Background check and drug screening is the responsibility of the applicant/student. Bring photocopies of transcripts, immunization documentation and completed application to the EMS Department for review. Incomplete applications will not be accepted. Applicants for the paramedic level must complete a departmental selection process. Attendance of the first session of each course is mandatory. Students missing the first class will be dropped from the roster by the department.

Applicants should be aware that the following questions are asked on the National Registry EMT and/or the Oregon EMT Application:

1. Do you or have you had within the past 10 years, any physical or mental condition that impairs, could impair, or has impaired your ability to perform the duties of an EMT? If you answer yes, explain whether your condition is controlled by medication or other treatment and how your condition treated or untreated, affects your ability to perform the duties of an EMT.

2. Do you or have you used in the last 10 years, any drug or chemical substance for other than legitimate medical purposes that impairs or has impaired your ability to perform the duties of an EMT?

3. Have you been counseled about, diagnosed with, or treated for, a dependency on alcohol or drugs within the last 10 years?

4. Have you ever been arrested, charged with, or convicted of any misdemeanor or felony? (Minor traffic violations need not be reported.)

5. Has an employer or supervising physician taken disciplinary action against you related to your duties as an EMT? (Discipline includes suspension, letter of reprimand, resignation in lieu of termination, a limitation or restriction of scope of practice or dismissal for cause.)

6. Have you been named in a lawsuit alleging medical malpractice or misconduct related to providing medical care?

7. Have you ever been disciplined, denied or revoked by the National Registry of EMTs or any health care certifying/licensing agency?

8. Have you ever surrendered or resigned a health care license or certificate?

9. Have you lived, worked or attended school outside of Oregon for 60 or more consecutive days in the last 5 years?

**EMERGENCY MEDICAL TECHNICIAN – PARAMEDIC AAS DEGREE**

Minimum 107 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Emergency Medical Technician-Paramedic Degree Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>EMS</td>
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<tr>
<td>BI</td>
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<td>Remaining General Education</td>
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<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>PSY</td>
<td>4</td>
</tr>
<tr>
<td>HPE</td>
<td>3</td>
</tr>
<tr>
<td>SP</td>
<td>3</td>
</tr>
<tr>
<td>CAS or CIS</td>
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<tr>
<td><strong>Credit Total</strong></td>
<td><strong>107</strong></td>
</tr>
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</table>

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
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<tr>
<th>Course</th>
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<td>EMS</td>
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<td>PSY</td>
<td>101</td>
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<tr>
<td>WR</td>
<td>121</td>
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<tr>
<td>General Education</td>
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</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>BI</td>
<td>231</td>
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<tr>
<td>EMS</td>
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<tr>
<td>MTH</td>
<td>65</td>
</tr>
<tr>
<td>SP</td>
<td>111</td>
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</tbody>
</table>
PORTLAND COMMUNITY COLLEGE 2012-2013

PROGRAMS & DISCIPLINES

Third Term
BI 232  Human Anatomy and Physiology II*  4
EMS 106  EMT Basic Part II  5
EMS 116  Emergency Medical Services Rescue  3

Fourth Term
BI 233  Human Anatomy and Physiology III*  4
EMS 113  Emergency Response Communication/ Documentation  2
EMS 114  Emergency Response  2
EMS 115  Crisis Intervention  3
EMS 118  EMS Medical Terminology  3
General Education  4

Fifth Term
EMS 240  Paramedic I  13

Sixth Term
EMS 242  Paramedic II  9
EMS 244  Paramedic Clinical Internship I  3

Seventh Term
EMS 246  Paramedic Clinical Internship II  4
EMS 248  Paramedic Field Internship I  2
HPE 295  Health and Fitness for Life  3
CAS or CIS 101 or higher  3

Eighth Term
EMS 250  Paramedic Field Internship II  7
EMS 252  Paramedic III  2

*Could be used as General Education

EMERGENCY MEDICAL SERVICES TWO-YEAR CERTIFICATE
Minimum 61 credits. Students must meet certificate requirements. The Emergency Medical Services Certificate is a related certificate. All courses are contained in the Emergency Medical Technician-Paramedic AAS Degree.

Emergency Medical Services Certificate Credit Summary
EMS  26
BI   12
Remaining General Education  8
WR   4
MTH  4
PSY  4
SP   3
Credit Total 61

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
EMS 100  Intro to Emergency Medical Services  3
PSY 101  Psychology/Human Relations or higher  4
WR 121  English Composition  4
General Education  4

Second Term
BI 231  Human Anatomy and Physiology I  4
EMS 105  EMT Basic Part I  5
MTH 65  Introductory Algebra  4
SP 111  Public Speaking or higher  3

Third Term
BI 232  Human Anatomy and Physiology II  4
EMS 106  EMT Basic Part II  5
EMS 116  Emergency Medical Services Rescue  3

Fourth Term
BI 233  Human Anatomy and Physiology III  4
EMS 115  Crisis Intervention  3
EMS 118  EMS Medical Terminology  3
EMS 113  Emergency Response Communication/ Documentation  2
EMS 114  Emergency Response  2
Patient Transportation  2

General Education  4

EMERGENCY TELECOMMUNICATOR/ 911 DISPATCHER
Cascade Campus
Public Services Education Building (PSEB), Room 129
971-722-5424
www.pcc.edu/911

CAREER AND PROGRAM DESCRIPTION
An Emergency TeleCommunicator (9-1-1 dispatcher) receives information from the public and from emergency services personnel (police, fire and medical), at a public safety answering point (PSAP), commonly referred to as a 9-1-1 Center. The job involves the operation of complex communication equipment; including two-way radio, multi-line telephone systems and computers.

Both emergency and non-emergency calls are handled and field personnel dispatched to a variety of calls. The dispatcher must have a thorough knowledge of local geography, an understanding of manpower needs and equipment, and be able to work within the constraints of departmental policy and procedures. Problem solving and decision making skills, with minimum supervision, are also required. TeleCommunicators must keep accurate records of communications received and transmitted, maintain a constant status of all field operations and be able to perform simultaneous functions.

TeleCommunicators must respect the individual’s right to privacy and maintain strict confidentiality of sensitive information.

The PCC Emergency TeleCommunicator 9-1-1 Program is located at the Cascade Campus. This certificate has 47 credits of intensive training program for students interested in a career in emergency telecommunications. The curriculum includes skills, knowledge and abilities that have been identified as critical for career entry by 9-1-1 center directors, the PCC 9-1-1 advisory committee and professional emergency telecommunications organizations. The 47 credit certificate follows the 40 hour Basic TeleCommunicator Training Program developed by the National Academies of Emergency Dispatch (NAED). A hands on simulator training is an integral part of the program. The Introduction to Emergency Services class is open to all students wishing to explore the various careers in public safety emergency services.

The Emergency TeleCommunicator Program is supported by local 9-1-1 centers and private agencies. This three-term certificate
is designed to teach the technical skills needed to perform successfully in emergency telecommunications. The PCC certificate program has been developed cooperatively with the 9-1-1 dispatch centers in the Portland metropolitan area and has served as a model for new programs throughout the United States. The program is supported by an advisory committee made up of emergency services managers, supervisors, trainers and dispatchers.

Additional state approved certifications may be obtained through the program, such as, inquiry level Law Enforcement Data System (LEDS) training, National Academies of Emergency Dispatch (NAED) Basic TeleCommunicator certification, and an overview of Critical Incident Stress Management (CISM).

Some course work within the Emergency TeleCommunicator 9-1-1 Program can be applied toward an Associate of General Studies degree. Students wishing to apply for a General Studies Associate degree should consult an academic advisor.

Classes are taught by professionals in the field of emergency services and public safety communications. Students observe 9-1-1 center operations during the training and work with professional TeleCommunicators in the labs.

The following courses are required of all students enrolled in the Emergency TeleCommunicator Program and are open to dispatchers and other professionals working in fields related to 9-1-1 dispatch. Enrollment is subject to course availability, class size, lab restrictions and department permission. In addition, public sector organizations, such as local 9-1-1 centers, may contact the department for professional in-service courses and seminars for their professional staff. The following course sequence is recommended. EM 101, ETC 105 and ETC 108 may be taken out of the order listed below.

DEGREES AND CERTIFICATES OFFERED
One-Year Certificate
Emergency TeleCommunicator/911 Dispatcher

PREREQUISITES AND REQUIREMENTS
Placement into WR 121 and basic keyboarding skill equivalent to 25 WPM.

APPLICATION AND ACCEPTANCE
The Emergency TeleCommunicator (ETC) Program is open to all high school graduates or equivalent, who meet the standards for employment in the 9-1-1 field, including good physical condition and high moral standards. Reading and writing skills are important.

Students planning to apply for the Emergency TeleCommunicator Program should contact the program coordinator or program advisor for specific eligibility requirements and an application. Advising appointments will be scheduled upon request and are required prior to registering for classes. Because of the unique responsibilities involved in public safety emergency communications, the Emergency TeleCommunicator Program reserves the right to require that a student, who appears to the department, unsuited for emergency communications employment be counseled into another area of study.

THE SELECTION PROCESS
Selection into the ETC Program requires the following steps be successfully completed:

1. Application – An application form is available in the Emergency Services Department Office, Public Services Education Building, Room 133 at Cascade Campus. Application forms are also available by mail upon request. Returned application forms will be processed upon receipt of all documentation listed in the application packet. Application for admission may be made any term, new students will be accepted for fall term, if space is available. Students wishing to complete the program in one year must begin fall term.

2. Placement test scores or transcript with course completion are required.
   • Placement into WR 121
   • Keyboarding certificate showing a minimum typing speed of 25 WPM, either three or five minute timing.

3. Advising appointment – an appointment with the program advisor to discuss curriculum and course schedule prior to registering for classes.

4. Acceptance into the program is conditional upon receipt of a satisfactory Criminal History Background check. Applicants will be asked to submit fingerprint cards and forms requesting criminal history information to the Oregon State Police/FBI. The cost of this background check is paid by the applicant. Limited fingerprinting services are available through the college, by appointment.

EMERGENCY TELECOMMUNICATOR/911 DISPATCHER ONE-YEAR CERTIFICATE
Minimum 47 credits. Students must meet all certificate requirements.

Emergency TeleCommunicator Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<td>ETC 105</td>
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<tr>
<td>EM 101</td>
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<td>EMS 122</td>
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<td>CJA 101</td>
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<td>ETC Electives</td>
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<tr>
<td><strong>Credit Total</strong></td>
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COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
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<td>ETC 103</td>
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<tr>
<td>ETC 108</td>
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<td>ETC 110</td>
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Second Term

<table>
<thead>
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<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>CAS 122</td>
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<tr>
<td>ETC 104</td>
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<tr>
<td>ETC 111</td>
<td>3</td>
</tr>
</tbody>
</table>
PORTLAND COMMUNITY COLLEGE  ■  2012-2013

PROGRAMS & DISCIPLINES

Third Term
EMS  120  First Responder  3
ETC  105  Crisis Intervention  3
ETC  112  Communication Center Operations - Adv  3
ETC  115  ETC: Capstone  3
ETC  202  Emergency Medical Dispatcher Overview  2
ETC Electives  1

Emergency TeleCommunicator/911 Dispatcher Electives
EM  110  Theory of Emergency Management  3
EM  114  History of U.S. Hazards, Disasters and Emergency Management  4
ETC  201  Law Enforcement Data System (LEDS)  1
ETC  203A  Tactical Dispatch for High Risk Incidents  1
ETC  280A  CE: Emergency TeleCommunicator/911 Dispatcher  varied

EMPLOYMENT SKILLS TRAINING

CAREER AND PROGRAM DESCRIPTION
This in an individualized certificate program designed to provide maximum flexibility for short-term educational opportunities targeted at specific occupational goals. The purpose of this program is to enable students to obtain employment, upgrade current workplace skills, maintain employment, and increase employability. Minimum 12 credits and a maximum of 44 and must be completed within 2 years.

Less than One-Year Certificate
Employment Skills Training

PREREQUISITES AND REQUIREMENTS
An interview with an advisor or a faculty member in the career technical department is required to determine the individual’s career goals as they relate to employability and coursework. Submission of an EST application is required and follows the interview with faculty. All PCC college-level courses are eligible to be included in the certificate. Developmental or basic education courses may not be included as part of the certificate. “Next steps” for continuing the educational process will be discussed and reviewed by the student, the faculty advisor, and possibly the employer. Prerequisite requirements for each employment skills training certificate are determined by the career technical department.

ENGINEERING

Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4159

www.pcc.edu/programs/engineering-transfer

CAREER AND PROGRAM DESCRIPTION
Engineering is a profession in which knowledge of mathematics and the sciences, gained through study and experience, is applied for the benefit of society. Engineers solve technical problems as members of project teams or as individual specialists. Work may involve research, development, planning, design, construction, manufacturing, supervision and management. Engineering is a licensed profession in all states.

PCC offers curricula equivalent to the first two years of study for most engineering disciplines at Oregon State University (OSU), Portland State University (PSU), the University of Portland (UP), Washington State University-Vancouver (WSUV) and Oregon Institute of Technology (OIT). These engineering disciplines include: Chemical Engineering, Civil Engineering, Computer Engineering, Construction Engineering Management, Electrical Engineering, Environmental Engineering, Industrial Engineering, Manufacturing Engineering, Mechanical Engineering and Renewable Energy Engineering.

Equivalent first and second year courses are also available for students interested in other majors or universities. (Note: not all majors listed are available at all the institutions listed.)

Advising guides outlining which engineering, mathematics, science and general education courses to take for the disciplines listed above have been prepared in cooperation with OSU, PSU, UP, WSUV and OIT. Following these advising guides will prepare students to transfer for their upper division studies. It is recommended that students prepare for transfer by selecting courses that meet lower division university requirements rather than by seeking a degree. Students interested in a degree should refer to the Comprehensive Degree Requirements section of this catalog for information concerning the granting of degrees.

PREREQUISITES AND REQUIREMENTS
All students must have an advising interview with an engineering faculty advisor. Students must place in WR 115 and MTH 251. High school courses in chemistry, physics and microcomputer literacy are highly recommended. Students lacking these courses are encouraged to take CH 100, PHY 101 and/or CIS 120 as appropriate, prior to beginning the program.

Students lacking the necessary prerequisites may upgrade their skills by taking writing, mathematics, science and microcomputer literacy courses or by completing the first year of one of PCC’s two-year engineering technology programs (civil, electronic, or mechanical). See a program advisor for information. To arrange a meeting with an engineering advisor, call the Engineering department at 971-722-4159 or e-mail to engineering@pcc.edu.

The use of a scientific, programmable, graphing calculator is required for the benefit of society. Engineers solve technical problems as members of project teams or as individual specialists. Work may involve research, development, planning, design, construction, manufacturing, supervision and management. Engineering is a licensed profession in all states.

ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)

Cascade Campus
Terrell Hall (TH), Room 220
971-722-6518

Rock Creek Campus
Building 3, Room 226
971-722-7425

Southeast Center
Mt. Tabor Hall (MTH), Room 128
971-722-6255
ENVIRONMENTAL STUDIES

Cascade Campus
Jackson Hall (JT), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
971-722-7257

Sylvania Campus
Health Technology Building (HT), Room 305
971-722-4225

DESCRIPTION

Environmental Studies is the interdisciplinary field that incorporates social sciences, mathematics, chemistry, biology, and geology in order to examine the interactions between human beings and the natural world. Environmental studies allows scientists and laypersons to understand the complex interaction between various organisms while also equipping policy-makers with important data to make critical decisions. Environmental Studies is important to a broad array of disciplines, from architecture to law to public health. Recent estimates show a growing demand in governmental, commercial, and industrial employment for professionals whose qualifications include environmental analytical skills.

Students explore environmental studies by enrolling in foundation classes in mathematics and the natural and social sciences. PCC offers students the opportunity to earn the Associate of Arts Oregon Transfer (AAOT) degree to complete courses in preparation for a bachelor’s degree in environmental studies or environmental science (if transferred to a four-year program at a college or university). Students must check the specific requirements of the bachelor’s program to which they intend to transfer. The opportunity to learn interdisciplinary skills allows students to customize their educational career goals while providing a solid foundation for future learning. For information regarding the Environmental Studies major transfer program, please contact the Environmental Studies office at Rock Creek at 971-722-7257.

See the Course Description (ESR prefix) section of this catalog for individual environmental science courses and their prerequisites.
Facilities Maintenance Program Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Intro to Facilities Maintenance Systems</td>
<td>2</td>
</tr>
<tr>
<td>Intro to Facilities Maintenance Systems</td>
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</tr>
<tr>
<td>Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>Heat Pumps</td>
<td>3</td>
</tr>
<tr>
<td>Lock Service and Repair</td>
<td>4</td>
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<tr>
<td>Heat Pumps</td>
<td>3</td>
</tr>
<tr>
<td>Basic HVAC/R Installation and Techniques</td>
<td>2</td>
</tr>
<tr>
<td>Commercial Refrigeration Shop</td>
<td>2</td>
</tr>
<tr>
<td>Commercial Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>Residential Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>College Algebra*</td>
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<tr>
<td>Fundamentals of Physics II*</td>
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<tr>
<td>Fundamentals of Physics II*</td>
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<tr>
<td>Fundamentals of Physics III*</td>
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<tr>
<td>Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting</td>
<td>4</td>
</tr>
<tr>
<td>Technical and Professional Writing I</td>
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</table>

*Could be used as General Education

Credits: 44
HVAC/R INSTALLER:
CAREER PATHWAY CERTIFICATE
Minimum 14 credits. The HVAC/R Installer Certificate is a Career Pathway. All courses for the certificate are contained in the Facilities Maintenance AAS Degree.

<table>
<thead>
<tr>
<th>FMT</th>
<th>Course</th>
<th>Credits</th>
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<td>102</td>
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<td>103</td>
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<td>111</td>
<td>Refrigeration Electrical I</td>
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<td>113</td>
<td>Refrigeration Electrical III</td>
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<tr>
<td>210</td>
<td>Basic HVAC/R Installation</td>
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</tbody>
</table>

FIRE PROTECTION TECHNOLOGY
Cascade Campus
Public Services Education Building (PSEB), Room 132
971-722-5532 Fax 971-722-5535
www.pcc.edu/fire

CAREER AND PROGRAM DESCRIPTION
Those enrolled in the Fire Protection Technology Program are preparing for occupations or advancement in fire suppression, investigation, prevention, public safety education, emergency management, emergency medical and rescue services, hazardous materials technology, wildland fire fighting, college transfer and other educational programs.

The PCC program is designed to correlate classroom, laboratory and field experience in public and private sector structural and wildland fire organizations. The program that follows is designed for both students who wish to enter the fire service (pre-service) and professional fire fighters who wish to obtain an AAS degree, or meet specific Oregon Department of Public Safety Standards and Training accreditation requirements, or meet entry requirements for BA/BS programs in fire administration at Eastern Oregon or Western Oregon University.

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
Fire Protection Technology

APPLICATION AND ACCEPTANCE
All students interested in exploring the fire protection program must first take Principles of Emergency Services (FP 101) as part of the prerequisites to enter the Fire Academy program.

Students that intend to enroll in the Fire Academy will be required to have a physicians release to use equipment designed to protect the respiratory system from the products of combustion and hazardous chemicals. It is recommended that the students acquire a physicians release prior to committing to the program. This equipment includes, but is not limited to: self contained breathing apparatus (SCBA), respirators and filter mask.

Due to the unique responsibilities involved in the practical application of fire protection and emergency response during lab periods and cooperative education assignments, the Fire Protection Technology Department reserves the right to counsel and guide students who demonstrate unsuitable characteristics (unsafe, unethical or immoral behavior, or physical inability to perform standard job duties) into another area of study.

Students who have a health, physical or psychological problem, that may affect or be affected by the use of protective breathing equipment should contact the department prior to entering the program.

Satisfactory criminal history background checks will be mandatory to qualify for cooperative education and state certification as a fire fighter and EMT Basic. The cost for the criminal history background check is the responsibility of the student.

Attendance at the first Fire Academy class is mandatory. No Exceptions. Students who miss the first class will be dropped from the roster by the department. In addition, students must be enrolled in both the Fire Academy Part I (FP 111) and Fire Academy Part II (FP 112).

Fire Protection Technology students should be aware that the following questions are asked on the National Registry EMT and/or the Oregon EMT Application:

1. Do you or have you had within the past 10 years, any physical or mental condition that impairs, could impair, or has impaired your ability to perform the duties of an EMT? If you answer yes, explain whether your condition is controlled by medication or other treatment and how your condition treated or untreated, affects your ability to perform the duties of an EMT.
2. Do you or have you used in the last 10 years, any drug or chemical substance for other than legitimate medical purposes that impairs or has impaired your ability to perform the duties of an EMT?
3. Have you been disciplined, denied or revoked by the National Registry of EMTs or any health care certifying/licensing agency?
4. Have you ever been arrested, charged with, or convicted of any misdemeanor or felony? (Minor traffic violations need not be reported.)
5. Has an employer or supervising physician taken disciplinary action against you related to your duties as an EMT? (Discipline includes suspension, letter or reprimand, resignation in lieu of termination, a limitation or restriction of scope of practice or dismissal for cause.)
6. Have you been named in a lawsuit alleging medical malpractice or misconduct related to providing medical care?
7. Have you ever been disciplined, denied or revoked by the National Registry of EMTs or any health care certifying/licensing agency?
8. Have you ever surrendered or resigned a health care license or certificate?
9. Have you lived, worked or attended school outside of Oregon for 60 or more consecutive days in the last 5 years?
FIRE PROTECTION TECHNOLOGY AAS DEGREE
Minimum 100 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning. A maximum of 24 Pass/No Pass credits are allowed in the Fire Protection Technology AAS Degree.

Fire Protection Technology Degree Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Protection Technology Course</td>
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<tr>
<td>Remaining General Education</td>
<td>12</td>
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<tr>
<td>EMS</td>
<td>10</td>
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<td>PHL</td>
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<td>HE/HEPE/PE</td>
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Credit Total: 100

Fire Protection Certificate Course
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</thead>
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<tr>
<td>EMS 105</td>
<td>EMT Basic Part I</td>
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<tr>
<td>EMS 106</td>
<td>EMT Basic Part II</td>
</tr>
<tr>
<td>FP 101</td>
<td>Principles of Emergency Services</td>
</tr>
<tr>
<td>FP 111</td>
<td>Fire Academy Part I</td>
</tr>
<tr>
<td>FP 112</td>
<td>Fire Academy Part II</td>
</tr>
<tr>
<td>FP 121</td>
<td>Fire Behavior and Combustion</td>
</tr>
<tr>
<td>FP 122</td>
<td>Fundamentals of Fire Prevention</td>
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<tr>
<td>FP 123</td>
<td>Hazardous Material Awareness/Operation</td>
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<tr>
<td>FP 133</td>
<td>Wildland Firefighter</td>
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<tr>
<td>FP 200</td>
<td>Fire Service Hydraulics and Water Supply</td>
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<td>or</td>
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</tr>
<tr>
<td>FP 132</td>
<td>Fire App/Pump Construction Operation and Hydraulics</td>
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<tr>
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<td>or</td>
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<tr>
<td>FP 201</td>
<td>Emergency Service Rescue</td>
</tr>
<tr>
<td>FP 202</td>
<td>Fixed Systems and Extinguishers</td>
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<tr>
<td>FP 203A</td>
<td>Introduction to Firefighting Tactics and Strategy</td>
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<td>FP 295</td>
<td>Major Emergency Tactics/Strategies</td>
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<td>or</td>
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</tr>
<tr>
<td>FP 293</td>
<td>Advanced Tactics and Strategies</td>
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<tr>
<td>and</td>
<td></td>
</tr>
<tr>
<td>FP 294</td>
<td>Incident Command</td>
</tr>
<tr>
<td>FP 210</td>
<td>Multicultural Strategies for Firefighters</td>
</tr>
<tr>
<td>FP 211</td>
<td>Building Construction for Firefighters</td>
</tr>
<tr>
<td>FP 212</td>
<td>Fire Investigation (Cause Determination)</td>
</tr>
<tr>
<td>FP 213</td>
<td>Principles of Supervision for Firefighters</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>FP 214</td>
<td>OCC Safety and Health for Fire</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>FP 270</td>
<td>Fire Officer I</td>
</tr>
<tr>
<td>FP 232</td>
<td>Fire App Driver/Operator II</td>
</tr>
<tr>
<td>FP 280A</td>
<td>CE: Fire Science</td>
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<td>HPE 295</td>
<td>Health and Fitness for Life</td>
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<td>3 PE Courses</td>
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<td>or</td>
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<td>Stress and Human Health</td>
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<td>or</td>
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<tr>
<td>HE 250</td>
<td>Personal Health</td>
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<td>or</td>
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<tr>
<td>HE 254</td>
<td>Weight Management and Health</td>
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PHL 202 Introduction to Philosophy-Elementary Ethics* 4

 Remaining General Education 12

*Could be used as General Education

FITNESS TECHNOLOGY
Sylvania Campus
Health Technology Building (HT), Room 215
971-722-4210
www.pcc.edu/fittech

CAREER AND PROGRAM DESCRIPTION
The Fitness Technologist is a professional member of the preventive health care team and will find employment in health and fitness clubs, wellness centers, public and private recreation facilities, hospitals and corporate fitness programs. The Fitness Technologist performs a variety of instructional and administrative duties. Instructional duties include directing safe and effective exercise programs, conducting fitness testing and instructing clients in appropriate sport and fitness activities. Administrative duties include sales, club business operations and member retention efforts. Fitness Technologists have a background in basic anatomy and physiology, applied kinesiology and fitness assessment and programming.

The Fitness Technology program has an articulation agreement in place with PSU. Students who successfully complete the Fitness Technology AAS degree may transfer to PSU as a junior.

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
Fitness Technology
One-Year Certificate
Fitness Technology
Less Than One-Year: Career Pathway Certificate
Healthy Older Adult Fitness

PREREQUISITES AND REQUIREMENTS
1. High school diploma or equivalent
2. Attend Fitness Technology orientation. Check the Fitness Technology website for dates and times of orientations.
3. Must have completed MTH 65 or higher and WR 121 with a C or better. For the Healthy Older Adult Fitness Career Pathway students must: Complete WR 121 and placement into MTH 65 or higher.
4. Applicant needs to be a PCC student before they apply.
5. Program entry begins Spring/Fall term. Check the Fitness Technology website for application deadlines.
6. Due to limited space, all prerequisites and requirements must be completed prior to application and acceptance into the program.
Applicants with disabilities are encouraged to contact Disability Services 971-722-4341.

Students are prepared for entry level work as a fitness professional, such as a personal trainer or fitness instructor. The program is designed to correlate classroom and laboratory experience with practical experience in fitness facilities in the community. Students who successfully complete the program are prepared to take national personal trainer certifying examinations given by the American College of Sports Medicine (ACSM), the National Strength and Conditioning Association (NSCA) or the American Council on Exercise (ACE).

Students requesting advanced placement or transfer credit from prior coursework must submit a written request to the Fitness Technology Department. Transcripts with previous coursework must be evaluated by student records prior to applying to the Fitness Technology program.

FITNESS TECHNOLOGY AAS DEGREE
Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

The coursework listed below is required. The following is an example of a term-by-term breakdown. Most courses are offered only in the term listed.

<table>
<thead>
<tr>
<th>Fitness Technology Degree Credit Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT</td>
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<tr>
<td>Fitness Technology Degree Electives</td>
</tr>
<tr>
<td>Professional Activities</td>
</tr>
<tr>
<td>Remaining General Education</td>
</tr>
<tr>
<td>SP</td>
</tr>
<tr>
<td>PSY</td>
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<tr>
<td>HPE</td>
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<td>CG</td>
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<tr>
<td>PE</td>
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COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown. Most courses are offered only in the term listed.

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<tr>
<td>FT 107</td>
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<tr>
<td>PE 283</td>
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<tr>
<td>Mind-Body Option</td>
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<td>PE 288</td>
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<tr>
<td>Team Sports Option</td>
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<td>FT 280</td>
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<tr>
<td>Fourth Term</td>
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<td>FT 203</td>
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<td>FT 204</td>
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<td>Fitness Technology Degree Electives</td>
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<table>
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<td>PE 282A</td>
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<td>Second Term</td>
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<td>PSY 101</td>
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<td>PE 287</td>
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<td>Aquatics Option</td>
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FIFTH TERM

<table>
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<tbody>
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<td>Fitness Technology Degree Electives</td>
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<table>
<thead>
<tr>
<th>Sixth Term</th>
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<tbody>
<tr>
<td>FT 280</td>
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<tr>
<td>Fitness Technology Degree Electives</td>
</tr>
</tbody>
</table>
*Could be used as General Education

1 Professional Activities degree requirement: PE 281 and three other Professional Activities courses (PE 282A, 283, 287, 288) and the corresponding PE Options.

FITNESS TECHNOLOGY ONE-YEAR CERTIFICATE
Minimum 47 credits. Students must meet all certificate requirements. The Fitness Technology Certificate is a related certificate. All courses within the certificate are contained in the Fitness Technology AAS Degree.

<table>
<thead>
<tr>
<th>Fitness Technology Certificate Credit Summary</th>
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<tbody>
<tr>
<td>FT</td>
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<tr>
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COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown. Most courses are offered only in the term listed.

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<tbody>
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<td>FT 101</td>
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<td>PE 181A</td>
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<tr>
<td>SP 111</td>
</tr>
<tr>
<td>PE 282A</td>
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<tr>
<td>Group Fitness Option</td>
</tr>
</tbody>
</table>

103
HEALTHY OLDER ADULT FITNESS:
CAREER PATHWAY CERTIFICATE

Minimum of 25 credits. The Healthy Older Adult Fitness Certificate is a Career Pathway. All courses are contained in the Fitness Technology AAS Degree.

**Second Term**
- **FT 103** Nutrition for Fitness Instructors 3
- **FT 104** Fitness Assessment and Programming I 3
- **FT 106** Analysis of Movement 3
- **PE 281** Professional Activities: Weight Training 1 2
- **PSY 101** Psychology and Human Relations 4
- **PE 287** Professional Activities: Aquatics 1 1
- Aquatic Option 1

**Third Term**
- **FT 105** Fitness Assessment and Programming II 3
- **FT 107** Exercise Science I 3
- **PE 283** Professional Activities: Mind Body Disciplines 1 1
- Mind-Body Disciplines Option 1
- **PE 288** Professional Activities: Team Sports Training 1 1
- Team Sports Option 1
- **FT 280** CE: Fitness Technology 4

1 Professional Activities certificate requirement: PE 281 and two other Professional Activities courses (PE 282A, 283, 287, 288) and the corresponding PE Options.

**Fitness Technology Degree Electives**
Any approved PCC or transfer course

**Professional Activities PE Options**
- **Aquatic Options:** 180A, 180B, 180C, 180F, 180G, 180H, 180K
- **Group Fitness Options:** 182A, 182B, 182F
- **Mind/Body Options:** 182J, 182K, 182L, 182P, 182S, 182U
- **Team Sports Options:** 185A, 185B, 185C, 185D, 185E, 185F, 185G, 185H, 185I, 185J, 185K, 185L

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**FRENCH**

Sylvania Campus
Communication Technology Building (CT), Room 219
971-722-8008

Rock Creek Campus
Building 3, Room 201
971-722-7235

**DESCRIPTION**

All PCC French courses are taught using an immersion method. The objective of all French courses is to help students develop communicative competence and proficiency in comprehension, speaking, reading, and writing French as well as cultural awareness. Assessment is based on consistent attendance, active student participation, and written and oral assignments.

There are no requirements or prerequisites for entry into the first term of first year French. However, the student should read the French course descriptions for other French courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will not be admitted to a course if their skill level is too advanced for that course.

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for successful completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend.

See the Course Description (FR prefix) section of this catalog for individual French language courses and their prerequisites.

**GENERAL SCIENCE**

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
971-722-7500

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Social Technology Building (ST), Room 312
971-722-4174

[www.pcc.edu/programs/general-science](http://www.pcc.edu/programs/general-science)

**DESCRIPTION**

General science courses introduce students to their physical environment and its scientific exploration; specific topics examined in these courses include geology, astronomy, oceanography and meteorology. These courses are designed to: provide an interdisciplinary overview, introduce fundamental scientific concepts, demonstrate scientific inquiry, illustrate how hazards and resources related to these topics impact society, and increase the student's appreciation of their world. These courses are appropriate for students with a limited science and math background. Work in the general sciences is an important part of many college programs.

All general science courses include a lab component and are on the PCC General Education course list. General science courses can be taken individually or in any sequence.

See the Course Description (GS prefix) section of this catalog for individual General Science courses and their prerequisites.
GEOGRAPHY

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7327

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6147

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4289

DESCRIPTION
Geography is concerned with the uniqueness of places. What makes one place unique and different from another? What are the factors and processes, both human and physical, which account for this uniqueness? Geography is not concerned with memorization of place names (capitals, rivers etc.) lists of imports and exports or other statistical information.

See the Course Description (GEO prefix) section of this catalog for individual Geography courses and course prerequisites.

DEGREES AND CERTIFICATES OFFERED

Less Than One-Year Certificate
Geographic Information Systems

PREREQUISITES AND REQUIREMENTS
1. Writing 115 or equivalent placement scores
2. Reading 115 or equivalent placement scores
3. Math 60 or equivalent placement scores

GEOGRAPHIC INFORMATION SYSTEMS LESS THAN ONE-YEAR CERTIFICATE

Minimum 44 credits. Students must meet all certificate requirements.

Geographic Information Systems Certificate Credit Summary
GEO 28
GIS Certificate Electives 12
SP 4
Credit Total 44

Course of Study
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
GEO 105  Introduction to Human Geography 4
GEO 264  Maps and Geospatial Concepts 4
GEO 265  Introduction to GIS (Geographical Information Systems) 4
GIS Certificate Electives 4

Second Term
GEO 106  Geography of the Developed World 4
GEO 266  GIS Analysis 4
SP 111  Public Speaking 4
GIS Certificate Electives 4

Third Term
GEO 107  Geography of the Developing World 4
GEO 267  Application Topics in Geographic Information Systems 4
GIS Certificate Electives 4

Geographic Information Systems Certificate Electives
BI 145  Introduction to Fish and Wildlife Conservation and Management 4
BI 200B  Principles of Ecology: Field Biology 4
BI 202  Botany: An Introduction to the Plant Kingdom 4
CSS 200  Soils and Plant Nutrition 3
ESR 150  Environmental Studies Orientation 1
ESR 160  Introduction to Environmental Systems 4
ESR 173  Environmental Science: Geological Perspectives 4
ESR 201  Applied Environmental Studies: Science/Policy Consideration 4
ESR 202  Applied Environmental Studies: Prep for Problem Solving 4
G 201  Physical Geology 4
G 202  Physical Geology 4
G 207  Geology of the Pacific Northwest 3
GEO 204  Geography of the Middle East 4
GEO 206  Geography of Oregon 4
GEO 209  Physical Geography: Weather and Climate 4
GEO 221  Field Geography: The Local Landscape 4
GEO 223  Field Geography: GPS and GIS 4
GEO 230  Geography of Race and Ethnic Conflicts 4
GEO 280A  Cooperative Education: Geography 4
GEO 280B  Cooperative Education: Geography Seminar 1
GEO 298  Independent Study: Geography 3
HOR 290  Introduction to Landscape Design 3

GEOLOGY

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
971-722-7500

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Social Technology Building (ST), Room 312
971-722-4174

www.pcc.edu/programs/geology
DESCRIPTION

Geology is the study of the Earth: its composition, structure, history and the processes which shape the Earth. Geologists investigate landscapes and rocks to discover the story of how the Earth formed and developed over geologic time. Geologists examine problems related to earth hazards, resources and environmental quality and then work toward developing corrective measures. Geology coursework is an important part of many college programs.

The G 201, G 202, G 203, G 291 courses introduce students to the study of geology while preparing them for further study in the earth science field, include a lab component, and are on the PCC General Education course list. The G 207, G 208, G 209 courses introduce students to specific topics within geology and do not include a lab component. The G 160, G 161, G 200 field experience courses use field trips to introduce students to the regional geology of the Pacific Northwest. Geology courses can be taken individually or in any sequence. See the Course Description (G prefix) section of this catalog for individual Geology courses and their prerequisites.

GERMAN

Sylvania Campus
Communication Technology Building (CT), Room 219
971-722-8002
www.pcc.edu/programs/german/

DESCRIPTION

All PCC German courses are taught using an immersion method. The objective of all German courses at PCC is to help students develop communicative competence and proficiency in comprehension, speaking, reading and writing German as well as cultural awareness. Assessment is based on consistent attendance, active student participation, and written and oral assignments.

There are no requirements or prerequisites for entry into the first term of first year German. However, the student should read the German course descriptions for other German courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will not be admitted to a course if their skill level is too advanced for that course.

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for successful completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend. See the Course Description (GER prefix) section of this catalog for individual German language courses and their prerequisites.

GERONTOLOGY

Sylvania Campus
Social Science Building (SS), Room 1
971-722-8254 or 971-722-4077
www.pcc.edu/ger

CAREER AND PROGRAM DESCRIPTION

Careers in gerontology are among the next big things in the 21st century workplace, and PCC’s gerontology program is on the cutting edge of this opportunity. This program is designed for individuals who wish to develop careers in the field of aging, those already employed or active in gerontology or related fields who wish to enhance their career paths, and those seeking challenging and meaningful career changes in response to new opportunities created by an aging society. Graduates of this program will develop problem-solving and research skills through interdisciplinary core courses and electives tailored toward their career goals. Internships, mentorships and career coaching will prepare students to create individualized career paths in service industries responding to a longer living and healthier population.

Exponential growth is expected in all service-providing industries related to aging, particularly in the health care services continuum, financial and legal services, leisure, life-long learning, hospitality, fitness and wellness areas.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
  Gerontology

Less than One-Year: Career Pathway Certificate
  Activity Assistant
  Activity Consultant
  Activity Director
  Advanced Behavioral and Cognitive Care
  End of Life Care and Support
  Gerontology
  Horticultural Therapy

PREREQUISITES AND REQUIREMENTS

Candidates should be ready to enter WR 121 and MTH 20 for any certificate and MTH 65 for the degree (demonstrated through placement tests or documented previous college level work.) Those candidates with insufficient background to enter at this level may need to extend the time it takes to complete the program. Faculty advisors will provide information regarding preparatory course work options.

Students may earn a Career Pathway Certificate in Gerontology or an Associate of Applied Science degree in Gerontology at PCC. Students may also earn the degree or certificates in conjunction with a certificate or degree in other PCC programs such as fitness technology, the allied health field, nursing, business, management, or alcohol and drug counseling. The Division of Social Science has signed an articulation agreement with Portland State University to allow graduates of our two-year program in Gerontology to transfer to Portland State University as juniors. Certificates and the degree can be completed through an online option.
Career Pathway Certificate credits count toward the AAS degree requirements. Students earning the AAS degree in Gerontology must meet college graduation requirements including General Education, Math and English competencies. The core courses provide basic knowledge about aging in several important domains. Students should take GRN 181 Exploring the Field of Aging in their first or second term in the program. Internships (GRN 280A credits) provide a unique opportunity for students to work directly with older adults in their career interest area. Degree and certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**GERONTOLOGY AAS DEGREE**

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

### Gerontology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN Program Electives</td>
<td>34</td>
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<tr>
<td>SOC</td>
<td>16</td>
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<tr>
<td>GRN</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
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<tr>
<td>PHL</td>
<td>4</td>
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<td>PSY</td>
<td>4</td>
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</tr>
<tr>
<td>WR</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AD</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GRN CAS Electives</td>
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</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>90</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Gerontology Degree Courses

**AD 105** Aging and Addiction 3
**AD 101** Alcohol Use and Addiction 3
**AD 102** Drug Use and Addiction 3
**AD 154** Client Record Management and Addiction 3
**AD 155** Ethical and Professional Issues 3
**BA 101** Introduction to Business 4
**FT 102** Injury Prevention and Management 3
**FT 106** Analysis of Movement 3
**FT 131** Structure and Function of the Human Body 4
**FT 202** Fitness and Aging 3
**GRN 131** Hospice Basics 1
**GRN 165** Basic Activity Director Training 2
**GRN 170** Resident Assistant I Training 2
**GRN 171** Resident Assistant II Training 1
**GRN 172** Adult Care Home Training 2
**GRN 175** The Mature Mind 1
**GRN 233** Supporting End of Life 4
**GRN 238** Introduction to Dementia Care 2
**GRN 236** Dementia Care Practice 2
**GRN 237** End of Life Therapies 1
**GRN 240** Care and Service Coordination 3
**GRN 245** Introduction to Guardianship in Oregon 1
**GRN 246** Guardianship Conservator Training 2
**GRN 265** Activity Professional Training I 3
**GRN 266** Activity Professional Training II 3
**GRN 267** Introduction to Professional Therapeutic Horticulture 2
**GRN 268** Techniques and Adaptive Strategies in Therapeutic Horticulture 2
**GRN 269** Therapeutic Horticulture Skills I 2
**GRN 270** Therapeutic Horticulture Programming for Adults and Children 2
**GRN 271** Therapeutic Horticulture Skills II 2
**GRN 272** Therapeutic Garden Design, Maintenance and Programming 3
**GRN 273** First Aid and Professional CPR 1
**HE 113** Women’s Health 4
**HE 212** Men’s Health 4
**HE 213** Stress and Human Health 4
**HE 214** Personal Health 3
**HE 215** Community and Public Health Issues 4
**HE 216** First Aid: Basic and Beyond 4
**HE 223** Community and Public Health Issues 4
**HE 224** Health and Fitness for Life 3
**HE 225** Medical Terminology 4
**HE 226** Psychology and Human Relations* 4
**HE 227** Introduction to Psychology Part I* 4
**HE 228** Introduction to Psychology Part II* 4
**HE 229** Introduction to Personality* 4
**HE 230** Human Development* 4
**HE 231** Family and Intimate Relationships* 4
**HE 232** Human Sexuality* 4
**HE 233** Human Sexuality* 4
**HE 234** Sociology in Everyday Life* 4
**HE 235** Social Change in Societies* 4
**HE 236** Social Problems* 4
**HE 237** Diversity in the United States* 4
**HE 238** Sociology of Gender* 4
**HE 239** Public Speaking* 4

**Notes:**
*Could be used as general education
1 Degree candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.
### PROGRAMS & DISCIPLINES

**Gerontology CAS Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111E</td>
<td>Beginning Website Creation: Expression Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office ²</td>
<td>4</td>
</tr>
<tr>
<td>CAS 140</td>
<td>Beginning Access ²</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel ²</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word ²</td>
<td>3</td>
</tr>
<tr>
<td>CAS 217</td>
<td>Intermediate Word ²</td>
<td>3</td>
</tr>
<tr>
<td>CAS 231</td>
<td>Publisher ²</td>
<td>3</td>
</tr>
<tr>
<td>CAS 232</td>
<td>Desktop Publishing: InDesign</td>
<td>3</td>
</tr>
</tbody>
</table>

² This requirement can be met through proof of comparable, work-based computer skills training.

**ACTIVITY ASSISTANT: CAREER PATHWAY CERTIFICATE**

Minimum 24 credits. The Gerontology Activity Assistant Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN 165</td>
<td>Basic Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 265</td>
<td>Activity Professional Training I</td>
<td>3</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship ¹</td>
<td>4</td>
</tr>
<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
<td>1</td>
</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HE 250</td>
<td>Personal Health</td>
<td>3</td>
</tr>
<tr>
<td>HPE 295</td>
<td>Health and Fitness for Life</td>
<td>(3)</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**ACTIVITY CONSULTANT: CAREER PATHWAY CERTIFICATE**

Minimum 21 credits. The Gerontology Activity Consultant Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN 165</td>
<td>Basic Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 265</td>
<td>Activity Professional Training I</td>
<td>3</td>
</tr>
<tr>
<td>GRN 266</td>
<td>Activity Professional Training II</td>
<td>3</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship ¹</td>
<td>4</td>
</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
<td>4</td>
</tr>
<tr>
<td>SOC 230</td>
<td>Introduction to Gerontology</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**ACTIVITY DIRECTOR: CAREER PATHWAY CERTIFICATE**

Minimum 36 credits. The Gerontology Activity Director Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 265</td>
<td>Activity Professional Training I</td>
<td>3</td>
</tr>
<tr>
<td>GRN 266</td>
<td>Activity Professional Training II</td>
<td>3</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship ¹</td>
<td>5</td>
</tr>
<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
<td>1</td>
</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

¹ Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**ADVANCED BEHAVIORAL AND COGNITIVE CARE: CAREER PATHWAY CERTIFICATE**

Minimum 30 credits. The Gerontology Advanced Behavioral and Cognitive Care Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 105</td>
<td>Aging and Addiction</td>
<td>3</td>
</tr>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 235</td>
<td>Introduction to Dementia Care</td>
<td>2</td>
</tr>
<tr>
<td>GRN 236</td>
<td>Dementia Care Practices</td>
<td>2</td>
</tr>
<tr>
<td>GRN 240</td>
<td>Care and Service Coordination</td>
<td>3</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship ¹</td>
<td>4</td>
</tr>
<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
<td>1</td>
</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
<td>1</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
<td>4</td>
</tr>
<tr>
<td>SOC 231</td>
<td>Sociology of Health and Aging</td>
<td>4</td>
</tr>
<tr>
<td>SOC 232</td>
<td>Death and Dying: Culture and Issues</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**END OF LIFE CARE AND SUPPORT: CAREER PATHWAY CERTIFICATE**

Minimum 36 credits. The Gerontology End of Life Care and Support Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN 131</td>
<td>Hospice Basics</td>
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</tr>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 233</td>
<td>Supporting End of Life</td>
<td>4</td>
</tr>
<tr>
<td>GRN 237</td>
<td>End of Life Therapies</td>
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</tr>
<tr>
<td>GRN 240</td>
<td>Care and Service Coordination</td>
<td>3</td>
</tr>
<tr>
<td>GRN 245</td>
<td>Introduction to Guardianship in Oregon</td>
<td>1</td>
</tr>
<tr>
<td>GRN 246</td>
<td>Guardian Conservator Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>Gerontology Internship ¹</td>
<td>4</td>
</tr>
<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
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</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
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</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
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<tr>
<td>SOC 231</td>
<td>Sociology of Health and Aging</td>
<td>4</td>
</tr>
<tr>
<td>SOC 232</td>
<td>Death and Dying: Culture and Issues</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**GERONTOLOGY: CAREER PATHWAY CERTIFICATE**

Minimum 43 credits. The Gerontology Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
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</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship ¹</td>
<td>4</td>
</tr>
</tbody>
</table>
PROGRAMS & DISCIPLINES

PORTLAND COMMUNITY COLLEGE n 2012-2013

GRAPHIC DESIGN

ic designers focus information toward an audience to achieve a
Graphic design is the art, discipline and profession of visual

www.pcc.edu/gd

COMMUNICATIONS TECHNOLOGY BUILDING, (CT) ROOM 102
SYLVANIA CAMPUS

GRN 280B Gerontology Internship Seminar 1
GRN 282 Gerontology Professional Seminar 1
PSY 236 Psychology of Adult Development and Aging 4
SOC 223 Social Gerontology/Sociology of Aging 4
SOC 230 Introduction to Gerontology 4
SOC 231 Sociology of Health and Aging 4
SOC 232 Death and Dying: Culture and Issues 4
WR 121 English Composition 4
Gerontology CAS Electives 3
Gerontology Program Electives 8

1 Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

HORTICULTURAL THERAPY: CAREER PATHWAY CERTIFICATE

Minimum 29 credits. The Horticultural Therapy Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree

GRN 165 Basic Activity Director Training 2
GRN 235 Introduction to Dementia Care 2
GRN 236 Dementia Care Practice 2
GRN 267 Introduction to Professional Therapeutic Horticulture 2
GRN 268 Techniques and Adaptive Strategies in Therapeutic Horticultural 2
GRN 269 Therapeutic Horticultural Skills I 2
GRN 270 Therapeutic Horticultural Programming for Adults and Children 2
GRN 271 Therapeutic Horticultural Skills II 2
GRN 272 Therapeutic Horticultural Skills II 2
GRN 280A CE: Gerontology Internship 1 4
GRN 280B Gerontology Internship Seminar 1
GRN 282 Gerontology Professional Seminar 1
SOC 223 Social Gerontology/Sociology of Aging 4

1 Certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

DEGREE AND CERTIFICATE OFFERED

Associate of Applied Science Degree
Graphic Design

PREREQUISITES AND REQUIREMENTS

Students are strongly encouraged to attend one of the graphic design orientation meetings held throughout the year. Please check www.pcc.edu/gd for times and dates. Students starting the program are required to test into WR 121 or above on the Writing placement test, and MTH 65 or above on the math placement test as minimum entry requirements.

The program begins fall term when students must successfully complete GD 120, GD 114 and GD 101 with a B or better before taking other first-year graphic design courses. Please note that some courses are only offered once during the year and enrollment is limited. First term design courses are taught in a hands-on, non-computer format. Beginning second term, design study is integrated with computer technology. In all classes, students study the principles and practices used to carry an idea from thumbnail sketches through layout and completed design. Both two- and three-dimensional design concepts in print and digital format are explored. All second year work is directed at building a professional level portfolio.

Full-time day students can complete the program in six terms. However, many students elect to take a part-time course load and take longer than six terms to complete the program. Students should contact the Graphic Design student support specialist at 971-722-4160 to consult for course planning. After completing the AAS degree students are eligible to transfer to Portland State University.

GRAPHIC DESIGN AAS DEGREE

Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Graphic Design Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 101</td>
<td>58</td>
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<tr>
<td>ART</td>
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<td>CAS</td>
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<td>MTH</td>
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</tbody>
</table>

Credit Total 97

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 131</td>
<td>Drawing*</td>
</tr>
<tr>
<td>GD 101</td>
<td>Macintosh for Graphic Designers</td>
</tr>
<tr>
<td>GD 114</td>
<td>Introductory Typography</td>
</tr>
<tr>
<td>GD 120</td>
<td>Graphic Design I</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

Sylvania Campus
Communications Technology Building, (CT) Room 102
971-722-4160, 971-722-4790, 971-722-4264

www.pcc.edu/gd

CAREER AND PROGRAM DESCRIPTION

Graphic design is the art, discipline and profession of visual communication. By combining images, words and ideas graphic designers focus information toward an audience to achieve a desired goal. Graphic designers blend artistic talent, typography and computer knowledge to create advertisements, brochures, logos and identity systems, newsletters, catalogs, signage systems, web pages, magazines and books. The two-year program at PCC prepares the student for entry-level work in the highly competitive and deadline-oriented field of graphic design. Class work is designed to simulate industry situations and standards.
Second Term
GD 116 Intermediate Typography 3
GD 122 Graphic Design II 3
GD 140 Digital Page Design I 3
GD 150 Digital Illustration I 3
SP 111 Public Speaking* 4

Third Term
ART 214 History of Graphic Design 4
GD 124 Graphic Design III 3
GD 141 Digital Page Design II 3
GD 151 Digital Illustration II 3
GD 160 Digital Imaging I 3

Note: All first year graphic design and art courses must be completed with a B or better before admission to second year courses.

Fourth Term
ART 270 Printmaking* 3
GD 221 Graphic Design IV 3
GD 244 Preparing Files for Print 3
GD 249 Graphic Design Studio 3
or
GD 280A CE: Graphic Design (3)
GD 260 Digital Imaging II 3

Fifth Term
CAS 111D Beginning Website Creation: Dreamweaver 3
GD 228 Professional Graphic Design Practices 3
GD 222 Graphic Design V 3
GD 239 Illustration for Graphic Designers 3
GD 242 Combined Graphic Programs 3

Sixth Term
All General Education courses must be completed by end of this term.
BA 239 Advertising 3
or
BA 223 Principles of Marketing (4)
GD 229 Portfolio Preparation 3
GD Art Elective 3
MTH 65 Introductory Algebra 4
General Education 4

*Could be used as General Education

Graphic Design Degree Art Electives
ART 115 Basic Design* 3
ART 116 Basic Design* 3
ART 117 Basic Design* 3
ART 237 Life Drawing* 3

Cooperative work experience and internship placements are available. These are highly recommended to prepare student for the graphic design industry.

Health

Cascade Campus
Jackson Hall (JH), Room 218
971-722-5076

Rock Creek Campus
Building 3, Room 207
971-722-7082

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Health Technology Building (HT), Room 305
971-722-4225

www.pcc.edu/programs/health/

DESCRIPTION
Health is the study of the health and well-being of the individual and community from a multi-dimensional perspective. The study of health connects the individual, group and environment as it examines both disease prevention and wellness promotion which serve to make possible our highest enjoyment of life, greatest constructive work, and best service to the world.

At PCC, health course offerings range from general health overview courses in personal health, community health, and health and fitness to specialty courses in stress, environment, children’s, men’s, and women’s health, plus several categories of and first aid and CPR courses. In addition to individual courses, a Health Studies Award is available. Additional information on the Health Studies Award may be found in the Focus Awards area of the catalog.

For a complete listing of Health (HE prefix) courses, see Course Descriptions at the end of the catalog.

HEALTH INFORMATION MANAGEMENT

Cascade Campus
Jackson Hall (JH), Room 210A
971-722-5667

www.pcc.edu/him

CAREER AND PROGRAM DESCRIPTION
Health information management (HIM) professionals manage health care data and information resources. The profession encompasses planning, collecting, aggregating, analyzing and disseminating individual patient and aggregate clinical data. HIM professionals serve the health care industry wherever health information is collected, organized, and analyzed. HIM professionals work in a variety of health care settings, payer organizations, research and policy agencies and accounting and legal firms.

HIM professionals bring unique skills to the health care industry such as managing health records and health information systems, summarizing data into useful information, protecting the privacy and security of patient health information and assisting providers in understanding data flow and reporting requirements within the context of dynamic rules, regulations and guidelines.

The PCC program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), in cooperation with the Council on Accreditation of the American Health Information Management Association. Graduates are eligible to take the national certification examination given through the American Health Information Management Association.
The program begins fall term only. Students must receive a C or better in all program required courses. The program is designed to correlate classroom and lab experience with practical experience in health care facilities. The lecture and lab portion of the program is offered entirely through distance learning.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Health Information Management

PREREQUISITES AND REQUIREMENTS
1. Compass scores to show readiness to enter WR 121, RD 115 and MTH 60.
2. Four credits of computer courses including windows, word processing, spreadsheet and database must be completed prior to taking any HIM courses.
3. Four credit medical terminology course must be completed prior to taking any HIM courses.
4. Evidence of immunity to measles.
5. Program advising with a Health Information Management program advisor.
6. Transportation to clinical facilities.
7. Criminal Background Check. Please contact the department office for information.

HEALTH INFORMATION MANAGEMENT
AAS DEGREE

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Health Information Management Degree Credit Summary
HIM 76
Remaining General Education 12
SP 4
WR 4

Credit Total 96

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
HIM 110 Health Information Technology I 4
HIM 120 Health Information Technology Lab I 1
HIM 128 Anatomy and Physiology for HIM 4
HIM 182 Health Care Delivery Systems 3
WR 121 English Composition 4

Second Term
HIM 105 Ancillary Information Analysis 3
HIM 107 Ancillary Information Analysis Lab 1
HIM 121 Legal and Ethical Aspects of Healthcare 3
HIM 129 Anatomy and Physiology for HIM II 4

Third Term
HIM 131 Medical Science 5
HIM 136 Medications 3
SP 100 Introduction to Speech Communication* 4
General Education 4

Fourth Term
General Education 8

Fifth Term
HIM 141 Health Information Technology II 3
HIM 270 ICD-10-CM Basic Coding 4
HIM 281 Data Management and Analysis I 3
HIM 283 Health Information Systems 4
HIM 286 Data Management and Analysis I Lab 2
HIM 292 Health Information Directed Practice I 1

Sixth Term
HIM 271 Quality Improvements in Healthcare 3
HIM 273 Intermediate ICD-10-CM and PCS 4
HIM 274 Quality Improvement in Healthcare Lab 1
HIM 276 Intermediate ICD-10-CM/PCS Lab 2
HIM 282 Data Management and Analysis II 3
HIM 285 Health Management and Compliance 3

Seventh Term
HIM 272 Health Information Management 3
HIM 275 Classification Systems III 3
HIM 277 Health Information Management Lab 2
HIM 290 Health Information Technology III 3
HIM 293 Health Information Directed Practice II 1

*Could be used as General Education.

HISTORY

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7248

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4289

www.pcc.edu/programs/history/

DESCRIPTION

History is one of the most important subjects that one can study because it touches every academic subject. The study of history enables individuals to think historically and to analyze cause and effect relationships in human affairs. Through the analysis and interpretation of past events, historians provide insights on current events as well as on the broader human condition. The more that people understand about their past, the greater their perspective becomes and the more likely the present is to make sense. Historians occupy positions in a wide variety of fields: for example, high school and college instructors, researchers in business and industry, government positions, journalism, law, librarians, profes-
sional writers and a host of other occupations that require critical thinking, research and writing skills.

PCC History offers survey classes in American history, western civilization, and eastern civilization. It also offers a number of specialty courses on topics such as African Americans, women’s history, the holocaust, Native American history, and Russian history. Not all classes are offered every term. All classes are transferable to four-year universities. See the Course Description (HST prefix) section of this catalog for individual history courses and course prerequisites.

HEALTH STUDIES FOCUS AWARD

SEE FOCUS AWARDS SECTION OF THE CATALOG

HONORS PROGRAM

Honors Program (all campuses)
971-722-5009 or 971-722-4081

DESCRIPTION

The Honors Program at PCC, piloted 2010-2012, offers motivated students the opportunity to participate in classes and enrichment activities designed to challenge them to reach their highest potential. The program endeavors to create a community of peer scholars working toward their academic goals. The program includes coursework, extracurricular activities, and the opportunity to develop a transfer portfolio.

The bulk of an honors student’s program will be taken in designated general education courses, such as WR 121H or SP 111H. Students take HON 101 early in their program which develops a community and provides leadership opportunities as they work toward the final course involving the completion of a capstone project.

Honors courses are open to all PCC students having a minimum GPA of 3.25 whether or not they are admitted to the program. Full membership in the program, however, offers significant benefits for motivated students. Please contact a program representative for further information.

HUMANITIES

Cascade Campus
Terrell Hall, (TH) Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7235

DESCRIPTION

Studying the humanities provides individuals with opportunities to explore the human experience through a variety of windows such as art and architecture, philosophy, literature, music, history and languages. Humanities students examine and interpret works from the viewpoint of several disciplines to better understand the influence of cultural values and world views, forms of political and social order, basis and impact of gender roles and effect of historic and environmental events on how individuals and societies perceive and project themselves. Humanities students could find jobs in three broad categories: academics, media and writing. Some specifics include teaching, business theorists, archaeologists, literary critics, cinematography, television and radio personalities, writers, journalists and talent agents; essentially any field that requires an understanding of the “human condition.”

At PCC, the humanities program includes a broad-based introductory course, sequences in technology, African Cultures and Leadership. See the Course Description (HUM prefix) section of this catalog for individual Humanities courses and course prerequisites.

INTERIOR DESIGN

Sylvania Campus
Science and Technology Building (ST), Room 208
971-722-4030
www.pcc.edu/interiors

CAREER AND PROGRAM DESCRIPTION

Interior designers specialize in creating uniquely defined environments that cater to the spatial needs and functional requirements of its user, drawing from a diverse set of skills. Students in this program learn to apply design principles and techniques to professional planning and furnishing of residential interiors.

PCC’s Interior Design program is the only two-year degree program in residential interior design available in Oregon and Southern Washington. Our graduates are sought by employers for their unique abilities: adept design problem solving, ability to draw from historical traditions, and effective communication skills. The curriculum includes a range of courses from Interior Design, Architecture, Art and Business. Students gain hands-on experience through an internship program. Articulation agreements are in place with several local colleges for those wanting to pursue related bachelor degrees.

The degree program prepares students for an entry-level position as an interior designer, or for more advanced placement in the wholesale or retail sales business. Emphasis is placed on a broad scope of courses which are application-oriented. Students must finish the Interior Furnishings Certificate before or concurrently with this option. Specializations within the program of study also include Design for Accessibility and Aging in Place, Kitchen and Bath Design and Sustainable Building Design.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Interior Design

One-Year Certificate
Design for Accessibility and Aging in Place
Kitchen and Bath

Less than One-Year Certificate
Sustainable Design
PREREQUISITES AND REQUIREMENTS
College level reading and writing skills and basic math skills are required. Individual courses may have prerequisites which are included in the course description. A C or better is required in all coursework in this major. Pass/No Pass grades are not accepted for interior design coursework.

INTERIOR DESIGN AAS DEGREE
Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Interior Design Degree Credit Summary
ID  36
ARCH 25
ID Degree Electives 12
Remaining General Education 9
ART  6
SP  4
WR  4
MTH  4
BA  3
Credit Total 103

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
ARCH 110 Introduction to Architectural Drawing 2
ARCH 131 Introduction to Drawing* 3
ID  131 Introduction to Interiors 3
MTH  65 Introductory Algebra 4
General Education 4

Second Term
ARCH  120 Introduction to Building Systems 2
ID  120 Interior Products and Materials I 3
ID  125 Computer Drafting for Interior Designers 3
WR  121 English Composition 4

Third Term
ARCH 200 Principles of Architectural Design 4
ID  236 Lighting Design 3
ID  132 Planning Interiors 3
SP  130 Speech Communication* 4
or
SP  111 Public Speaking* 4

Fourth Term
ARCH 132 Residential Building Codes 2
ID  122 History of Furniture-Ancient to 1800 3
ID  133 Space Planning and Design 3
ID  138 Introduction to Kitchen and Bath Planning 3
ID  230 Textiles for Interiors 3

Fifth Term
ARCH 111 Working Drawings I 3
ARCH 121 Structural Systems I 2
ARCH 127 Introduction to Goggle Sketch-Up 3
ART  215 History of American Res Architecture 3
ID  121 Sustainable Materials for Residential Interiors 3
ID  123 History of Furniture - 1800 to Present 3
ID  135 Professional Practices for Designers 3
ID Degree Electives 6

Sixth Term
BA  238 Sales 3
ID  234 Advanced Interiors 3
ID Degree Electives 6
General Education 5
*Could be used as General Education

KITCHEN AND BATH ONE-YEAR CERTIFICATE
Minimum 51 credits. Students must also meet certificate requirements. The Kitchen and Bath Certificate is a related certificate. All courses within the certificate are contained in the Interior Design AAS Degree.

Kitchen and Bath Certificate Credit Summary
ID  34
ARCH  115 Basic Design* 3
ARCH  116 Basic Design* 3
BCT  244 Kitchen and Bath Cabinet Installation 2
ID  225 CAD for Kitchen and Bath Design 1
ID  238 Advanced Kitchen and Bath Planning 3
ID  220A CE: Kitchen and Bath *varied
Credit Total 51

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
ARCH  100 Graphic Communication for Designers 3
ARCH  110 Introduction to Architectural Drawing 2
ARCH  124 Introduction to Building Systems 2
ID  120 Interior Products and Materials I 3
ID  125 Computer Drafting for Interior Designers 3
WR  121 English Composition 4

Second Term
ID  121 Sustainable Materials for Residential Interiors 3
ID  132 Planning Interiors 3
ID  133 Space Planning 3
ID  138 Introduction to Kitchen and Bath Planning 3

Third Term
BCT  244 Kitchen and Bath Cabinet Installation 2
ID  135 Professional Practice for Designers 3
ID  225 CAD for Kitchen and Bath Design 1
ID  236 Lighting Design 3
ID  238 Advanced Kitchen and Bath Planning 3
**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 121</td>
<td>Structural Systems I</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>Residential Building Code</td>
<td>2</td>
</tr>
<tr>
<td>ART 215</td>
<td>History of American Residential Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ID 280A</td>
<td>CE: Kitchen and Bath</td>
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</tbody>
</table>

**DESIGN FOR ACCESSIBILITY AND AGING IN PLACE ONE-YEAR CERTIFICATE**

Minimum 49 credits. Students must also meet comprehensive certificate requirements.

**Design for Accessibility and Aging in Place Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<td>ARCH 7</td>
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<td>BCT 3</td>
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**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
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<th>Course</th>
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<tr>
<td>ARCH 100</td>
<td>Graphic Communication for Designers</td>
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<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
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<tr>
<td>ID 125</td>
<td>Computer Drafting for Interior Designers</td>
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<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
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<tr>
<td>SOC 230</td>
<td>Introduction to Gerontology</td>
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**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ID 120</td>
<td>Interior Products and Materials I</td>
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<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors</td>
<td>3</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
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</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ARCH 132</td>
<td>Residential Building Codes</td>
<td>2</td>
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<tr>
<td>ID 132</td>
<td>Planning Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 133</td>
<td>Space Planning</td>
<td>3</td>
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<tr>
<td>SOC 231</td>
<td>Sociology of Health and Aging</td>
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**Fourth Term**

<table>
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<tr>
<td>BCT 100</td>
<td>Overview of the Construction Industry</td>
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<tr>
<td>ID 138</td>
<td>Introduction to Kitchen and Bath Planning</td>
<td>3</td>
</tr>
<tr>
<td>ID 236</td>
<td>Lighting Design</td>
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<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
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</table>

**SUSTAINABLE DESIGN LESS THAN ONE-YEAR CERTIFICATE**

Minimum 42 credits. Students must also meet comprehensive certificate requirements.

**Sustainable Design Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>ARCH 24</td>
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<td>ESR 4</td>
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<td>Credit Total 42</td>
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</table>

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 101</td>
<td>Arch Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 131</td>
<td>Sustainable Building Strategies</td>
<td>4</td>
</tr>
<tr>
<td>ESR 171</td>
<td>Environmental Science</td>
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</tr>
<tr>
<td>ESR 172</td>
<td>Environmental Science</td>
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</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 224</td>
<td>Passive and Active Bldg Systems</td>
<td>4</td>
</tr>
<tr>
<td>BCT 206</td>
<td>Sustainable Construction Practices</td>
<td>3</td>
</tr>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Res Interiors</td>
<td>3</td>
</tr>
<tr>
<td>PHL 206</td>
<td>Environmental Ethics</td>
<td>4</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 113</td>
<td>Site Planning</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 204</td>
<td>Green Residential Studio</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 280</td>
<td>CE: Arch Drafting</td>
<td>4</td>
</tr>
<tr>
<td>SOC 228</td>
<td>Environmental Sociology</td>
<td>4</td>
</tr>
</tbody>
</table>

**INTERIOR FURNISHINGS: CAREER PATHWAY CERTIFICATE**

Minimum 41 credits. Students must also meet comprehensive certificate requirements. The Interior Furnishings Certificate Career Pathway. All courses are in the Interior Design AAS Degree.

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 122</td>
<td>History of Furniture- Ancient to 1800</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>Graphic Communication for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ART 215</td>
<td>History of American Res Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ID 120</td>
<td>Interior Products and Materials I</td>
<td>3</td>
</tr>
<tr>
<td>ID 123</td>
<td>History of Furniture- 1800 to Present</td>
<td>3</td>
</tr>
<tr>
<td>ID 125</td>
<td>Computer Drafting for Interior Designers</td>
<td>3</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 135</td>
<td>Professional Practices for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID 230</td>
<td>Textiles for Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 236</td>
<td>Lighting Design</td>
<td>3</td>
</tr>
</tbody>
</table>

**JAPANESE**

Rock Creek Campus
Building 3, Room 201
971-722-7235
Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-8005

[www.pcc.edu/programs/japanese](http://www.pcc.edu/programs/japanese)
DESCRIPTION

All PCC Japanese courses are taught using an immersion method. The objective of all Japanese courses is to help students to develop communicative competence and proficiency in comprehension, speaking, reading, and writing Japanese as well as cultural awareness. Assessment is based on consistent attendance, active student participation, and written and oral assignments.

There are no prerequisites and requirements for entry into the first term of first year Japanese. However, the student should read the Japanese course descriptions for other Japanese courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will not be admitted to a course if their skill level is too advanced for that course.

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for successful completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend. See the Course Description (JPN prefix) section of this catalog for individual Japanese language courses and their prerequisites.

JOURNALISM

Sylvania Campus
Communications Technology Building (CT), Room 216
971-722-4264

DESCRIPTION

Journalism is inquiry: the struggle to understand and respond effectively to public issues. While it is the collection and transmission of news through media such as newspapers, periodicals, television, radio, and the Internet, it is more than simply a commodity that can be mined from public events and repackaged as “news.” It is fundamentally a democratic art, a way a free society engages in conversation with itself. In part, the study of journalism allows students to analyze the media and their impact on the world.

PCC offers courses in Journalism that introduce the student to the media and to media literacy through the study of the history of mass media, developing research and writing techniques, and examining visual communication. Students who take journalism courses find it helps them develop and hone their judgments in making public and personal choices. PCC Journalism courses are transferable to any Oregon college or university, fulfill General Education requirements for the AAOT degrees.

See the Course Description (J prefix) section of this catalog for individual Journalism courses and their prerequisites.

LANDSCAPE TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
971-722-7500
www.pcc.edu/landscape

CAREER AND PROGRAM DESCRIPTION

Prepare for entry level and supervisory work in landscape construction, landscape management, landscape design, or nursery production. In the construction area, students work with landscape contractors installing landscapes. Those specializing in management work primarily in maintaining existing landscapes both private and public. Landscape designers work with clients and contractors to produce residential design. Upon application to the Landscape Contractors Board and presentation of transcripts and diploma, students completing the Associate of Applied Science Degree in Landscape Technology or one of the two-year certificates with a minimum 2.5 GPA will be eligible to sit for the Landscape Contractors licensing exam.

Associate of Applied Science Degree classes are designed to develop knowledge and skills in plant care, plant identification, soils, irrigation, landscape business operations, estimating and bidding, basic landscape design and construction practices. With proper licensing and experience, many students establish their own business in construction, maintenance or design. Employment can include work with retail and wholesale nurseries, garden centers, landscape contractors, landscape designers, positions in landscape maintenance and gardening, and at landscape and horticultural suppliers.

Landscape Construction Certificate classes are designed to develop knowledge and skills in plant care, plant identification, soils, irrigation, landscape business operations, estimating and bidding, and construction practices. Students successfully completing this curriculum may seek field supervisory positions in landscape construction. Upon application and presentation of transcripts and certificate to the State of Oregon Landscape Contractors Board, students completing this certificate will be eligible to sit for the Landscape Contractors licensing exam. Students are prepared for work in landscape construction installing landscapes, hardscapes (outdoor construction features) and irrigation systems.

Landscape Management Certificate classes are designed to develop knowledge and skills in plant identification, soils, irrigation, landscape business operations, grounds maintenance, tree care, turfgrass culture and pest management. Students successfully completing this curriculum may seek field level supervisory positions in the landscape management industry. Students are prepared for work in the landscape management field maintaining residential, estate, commercial and public properties, golf courses, private and public gardens, and parks.

Landscape Design Certificate classes are developed to build knowledge and skills in plant identification, soils, irrigation, site measurement and analysis, landscape design history, and design. Students completing the curriculum will have the skills needed to produce landscape designs. The 72 credits of required landscape design courses meet the educational requirement for certification with the Association of Professional Landscape Designers. Students are prepared to work in landscape design and construction field, performing services for residential and small commercial projects. They may work for garden centers, landscape contractors, landscape designers, or be self employed.

Landscape Service Technician - The first year core of classes is designed to develop knowledge and skills in plant care, plant identification, soils, irrigation, basic landscape design and con-
struction practices. Students successfully completing this curriculum may seek entry level positions with landscape companies and will have completed the educational requirement for applying a combination of education and work experience as qualifying to sit for the State of Oregon Landscape Contractors licensing exam. Students are prepared for entry level positions in sales, construction or maintenance at wholesale and retail nurseries, landscape installation companies, or landscape maintenance companies.

Following the listed sequence of classes and entry into the program in the fall is recommended although not required by the program.

**DEGREES AND CERTIFICATES OFFERED**

**Associate of Applied Science Degree**
- Landscape Technology
- Landscape Technology - Landscape Construction Option
- Landscape Technology - Landscape Design Option
- Landscape Technology - Landscape Management Option

**Two Year Certificates**
- Landscape Construction - Suspended
- Landscape Design - Suspended
- Landscape Management - Suspended

**Less than One-Year Certificate**
- Landscape Service Technician

**PREREQUISITES AND REQUIREMENTS**

All degree landscape students will be required to place into WR 115 and Reading 115 or completion of Upper Advanced English for Speakers of Other Languages (ESOL). Check the appropriate course descriptions for individual course requirements.

All one-year certificate landscape students will be required to place at or above the following placement: Writing 41, Reading 41 or completion of Upper Advanced ESOL and Numerical 42. Check the appropriate course descriptions for individual course requirements.

All Landscape Technology courses must be completed with a C or better to meet the requirements for graduation.

**LANDSCAPE TECHNOLOGY AAS DEGREE**

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

<table>
<thead>
<tr>
<th>Landscape Technology Degree Credit Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT</td>
</tr>
<tr>
<td>HOR</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td>LAT Degree Electives</td>
</tr>
<tr>
<td>CSS</td>
</tr>
<tr>
<td>MSD</td>
</tr>
<tr>
<td><strong>Course Total</strong></td>
</tr>
</tbody>
</table>

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**
- HOR 226  Plant Materials - Deciduous  4
- LAT 106  Basic Horticulture               4
- LAT 111  Landscape Construction Practices 3
- LAT 236  Landscape Math                  3

**Second Term**
- CSS 200  Soils and Plant Nutrition       4
- HOR 227  Plant Materials - Evergreen     4
- LAT 104  Pesticides                      3
- LAT 109  Plant Propagation                3

**Third Term**
- HOR 228  Plant Materials - Flowering     4
- HOR 290  Introduction to Landscape Design 3
- LAT 108  Landscape Irrigation I           3
- LAT 110  Grounds Maintenance              3

**Fourth Term**
- General Education                        8
- Landscape Technology Electives           3

**Fifth Term**
- LAT 217  Landscape Drafting              3
- LAT 223  Site Surveying and Analysis     3
- Landscape Technology Electives           6

**Sixth Term**
- LAT 243  Landscape Business Operations   3
- LAT 264  Landscape Estimating and Bidding 3
- MSD 101  Principles of Management and Supervision 3
- General Education                        4

**Seventh Term**
- HOR 255  Spring Annuals and Perennials    3
- or
- HOR 272  Summer Annuals and Perennials     (3)
- LAT 241  Turfgrass Cultural Practices     3
- General Education                        4
- Landscape Technology Electives           3

**Eighth Term**
- LAT 280A  CE: Landscape 1  6

1 Students with one year documented work experience may take an additional 6 credits of General Education or landscape electives in place of cooperative work experience. Arrange with a landscape advisor.

**Landscaping Technology Degree Electives**
- HOR 291  Landscape Design Process         3
- LAT 214  Plant Composition I              3
- LAT 219  Landscape Illustration           3
- LAT 225  Water Gardens                    3
- LAT 232  Landscape Irrigation II          4
- LAT 235  Tree Care-Fall                   3
- LAT 240  Tree Care-Spring                  3
- LAT 250  Plant Disease, Insects and Weed Identification 3
- LAT 262  Native Plants of Oregon          3
- LAT 271  Computer Aided Landscape Design  3
- LAT 272  Sustainable Landscaping          3
- LAT 275  Introduction to Landscaping Night Lighting 3
- LAT 278  Oregon LCP Examination Preparation 3
LANDSCAPE CONSTRUCTION AAS DEGREE
Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Student should consult with program advisors for course planning.

Landscape Construction Degree Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT</td>
<td>47</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>HOR</td>
<td>15</td>
</tr>
<tr>
<td>Landscape Construction Electives</td>
<td>6</td>
</tr>
<tr>
<td>CSS</td>
<td>4</td>
</tr>
<tr>
<td>MSD</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>91</td>
</tr>
</tbody>
</table>

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>First Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 226 Plant Materials - Deciduous</td>
</tr>
<tr>
<td>LAT 106 Basic Horticulture</td>
</tr>
<tr>
<td>LAT 111 Landscape Construction Practices</td>
</tr>
<tr>
<td>LAT 236 Landscape Math</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 200 Soils and Plant Nutrition</td>
</tr>
<tr>
<td>HOR 227 Plant Materials - Evergreen</td>
</tr>
<tr>
<td>LAT 272 Sustainable Landscaping</td>
</tr>
<tr>
<td>Landscape Construction Electives</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 228 Plant Materials - Flowering</td>
</tr>
<tr>
<td>HOR 290 Introduction to Landscape Design</td>
</tr>
<tr>
<td>LAT 108 Landscape Irrigation I</td>
</tr>
<tr>
<td>LAT 110 Grounds Maintenance</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape Construction Electives</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 211 Landscape Construction Practices II</td>
</tr>
<tr>
<td>LAT 223 Site Surveying and Analysis</td>
</tr>
<tr>
<td>LAT 232 Landscape Irrigation II</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sixth Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 243 Landscape Business Operations</td>
</tr>
<tr>
<td>LAT 264 Landscape Estimating and Bidding</td>
</tr>
<tr>
<td>LAT 273 Sustainable Landscape Water Management</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 224 Grading and Drainage</td>
</tr>
<tr>
<td>LAT 280A CE: Landscape1</td>
</tr>
<tr>
<td>MSD 101 Principles of Management and Supervision</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

1 Students with one year documented work experience in landscape construction may take an additional 6 credits of LAT elective courses in lieu of cooperative work experience. Arrange with a landscape advisor.

Landscape Construction Electives
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 255 Spring Annuals and Perennials</td>
<td>3</td>
</tr>
<tr>
<td>HOR 266 Interior Plants</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

LANDSCAPE DESIGN AAS DEGREE
Minimum 96 credits. Students must meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Landscape Design Degree Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT</td>
<td>49</td>
</tr>
<tr>
<td>HOR</td>
<td>21</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>Landscape Design Electives</td>
<td>6</td>
</tr>
<tr>
<td>CSS</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>96</td>
</tr>
</tbody>
</table>

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>First Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 226 Plant Materials - Deciduous</td>
</tr>
<tr>
<td>LAT 106 Basic Horticulture</td>
</tr>
<tr>
<td>LAT 111 Landscape Construction Practices</td>
</tr>
<tr>
<td>LAT 236 Landscape Math</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 200 Soils and Plant Nutrition</td>
</tr>
<tr>
<td>HOR 227 Plant Materials - Evergreen</td>
</tr>
<tr>
<td>LAT 272 Sustainable Landscaping</td>
</tr>
<tr>
<td>Landscape Design Electives</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 228 Plant Materials - Flowering</td>
</tr>
<tr>
<td>HOR 290 Introduction to Landscape Design</td>
</tr>
<tr>
<td>LAT 108 Landscape Irrigation I</td>
</tr>
<tr>
<td>LAT 110 Grounds Maintenance</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape Design Electives</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 226 Plant Materials - Deciduous</td>
</tr>
<tr>
<td>LAT 106 Basic Horticulture</td>
</tr>
<tr>
<td>LAT 111 Landscape Construction Practices</td>
</tr>
<tr>
<td>LAT 236 Landscape Math</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sixth Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 228 Plant Materials - Flowering</td>
</tr>
<tr>
<td>HOR 290 Introduction to Landscape Design</td>
</tr>
<tr>
<td>LAT 108 Landscape Irrigation I</td>
</tr>
<tr>
<td>LAT 110 Grounds Maintenance</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Seventh Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 214 Plant Composition I</td>
</tr>
<tr>
<td>LAT 217 Landscape Drafting</td>
</tr>
<tr>
<td>LAT 223 Site Surveying and Analysis</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
</tr>
</tbody>
</table>
Sixth Term
HOR 291 Landscape Design Process 3
LAT 243 Landscape Business Operations 3
LAT 264 Landscape Estimating and Bidding 3
LAT 273 Sustainable Landscape Water Management 3

Seventh Term
HOR 255 Spring Annuals and Perennials 3
or
HOR 272 Summer Annuals and Perennials (3)
LAT 219 Landscape Illustration 3
LAT 224 Grading and Drainage 3
LAT 271 Computer Aided Landscape Design 3

Eighth Term
LAT 280C CE: Landscape Design 1 3
General Education 4

1 Students with one year documented work experience in landscape design may take an additional 3 credits of LAT elective courses in lieu of cooperative work experience. Arrange with landscape advisor.

Landscape Design Degree Electives
HOR 266 Interior Plants 3
LAT 104 Pesticides 3
LAT 109 Plant Propagation 3
LAT 211 Landscape Construction II 3
LAT 225 Water Gardens 3
LAT 232 Irrigation II 4
LAT 235 Tree Care-Fall 3
LAT 240 Tree Care-Spring 3
LAT 241 Turfgrass Cultural Practices 3
LAT 250 Plant Diseases, Insects and Weed Identification 3
LAT 262 Native Plants of Oregon 3
LAT 275 Introduction to Landscaping Night Lighting 3
LAT 278 Oregon LCP Exam Preparation 3

LANDSCAPE MANAGEMENT AAS DEGREE
Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Student should consult with program advisors for course planning.

Landscape Management Certificate Credit Summary
LAT 49
HOR 18
General Education 16
Landscape Management Electives 6
CSS 4
MSD 3
Credit Total 96

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
HOR 226 Plant Materials - Deciduous 4
LAT 106 Basic Horticulture 4
LAT 111 Landscape Construction Practices 3
LAT 236 Landscape Math 3

Second Term
CSS 200 Soils and Plant Nutrition 4
HOR 227 Plant Materials - Evergreen 4
LAT 104 Pesticides 3
LAT 272 Sustainable Landscaping 3

Third Term
HOR 228 Plant Materials - Flowering 4
HOR 290 Introduction to Landscape Design 3
LAT 110 Grounds Maintenance 3
LAT 108 Landscape Irrigation I 3

Fourth Term
Landscape Management Electives 3
General Education 8

Fifth Term
LAT 235 Tree Care - Fall 3
LAT 280A CE: Landscape Design 1 6
General Education 4

Sixth Term
LAT 243 Landscape Business Operations 3
LAT 264 Landscape Estimating and Bidding 3
LAT 273 Sustainable Landscape Water Management 3
MSD 101 Principles of Management and Supervision 3

Seventh Term
HOR 255 Spring Annuals and Perennials 3
or
HOR 272 Summer Annuals and Perennials (3)
LAT 240 Tree Care - Spring 3
LAT 241 Turfgrass Cultural Practices 3
LAT 250 Plant Disease, Insects and Weed Identification 3

Eighth Term
Landscape Management Electives 3
General Education 4

1 Students with one year documented work experience in landscape management may take an additional 6 credits of elective courses in lieu of cooperative work experience. Arrange with landscape advisor.

Landscape Management Degree Electives
HOR 266 Interior Plants 3
HOR 291 Landscape Design Process 3
LAT 109 Plant Propagation 3
LAT 211 Landscape Construction II 3
LAT 214 Plant Composition I 3
LAT 217 Landscaping Drafting 3
LAT 219 Landscape Illustration 3
LAT 223 Site Surveying and Analysis 3
LAT 224 Grading and Drainage 3
LAT 225 Water Gardens 3
LAT 232 Landscape Irrigation II 4
LAT 262 Native Plants of Oregon 3
LAT 271 Computer Aided Landscape Design 3
LAT 275 Oregon LCP Exam Preparation 3

LANDSCAPE TWO-YEAR CERTIFICATES
The Landscape Construction, Landscape Design, and Landscape Management Two-Year Certificates have been suspended for the 2012-2013 academic year. For more information or availability of courses please contact the department at 971-722-7500 or visit the department web site at www.pcc.edu/landscape.
LANDSCAPE SERVICE TECHNICIAN LESS THAN ONE-YEAR CERTIFICATE

Minimum 41 credits. Students must meet all certificate requirements. The Landscape Service Technician Certificate is a related certificate. All courses are contained in the Landscape Technology AAS Degree.

Landscape Service Technician Certificate Credit Summary
LAT 23
HOR 15
CSS 4
Credit Total 42

First Term
HOR 226 Plant Materials - Deciduous 4
LAT 106 Basic Horticulture 4
LAT 111 Landscape Construction Practices 3
LAT 236 Landscape Math 3

Second Term
CSS 200 Soils and Plant Nutrition 4
HOR 227 Plant Materials - Evergreen 4
LAT 104 Pesticides 3
LAT 109 Plant Propagation 3

Third Term
HOR 228 Plant Materials - Flowering 4
HOR 290 Introduction to Landscape Design 3
LAT 108 Landscape Irrigation I 3
LAT 110 Grounds Maintenance 3

MACHINE MANUFACTURING TECHNOLOGY

Sylvania Campus
Automotive Metals Building (AM), Room 113
971-722-4155, 971-722-4613
www.pcc.edu/programs/machine-manufacturing/

CAREER AND PROGRAM DESCRIPTION

Machinists operate various types of material processing equipment such as lathes, drill presses, milling machines, grinders, computer numerical control (CNC) machines, rapid prototyping, and computer assisted machining (CAM) systems. Machinists may specialize in the operation of one type of machine or work in a shop where they are required to operate several different machines.

The Machine Manufacturing Technology (MMT) program has been developed specifically in a modular self-paced format, allowing the student to attend courses on a schedule they choose (day or evenings). The open exit design of the program allows a student to focus on a course and complete the materials in a matter of days or weeks instead of traditional term-long classroom formats. The program fits the needs of students in that it is designed to be self-paced (students learn at their own speed, taking as many or as few modules as they desire), individualized (courses tailored to students), flexible (students select their own attendance schedules), and open-exit (students complete courses whenever the work is done, and they may leave the program when they have met their training goals or needs).

Existing MMT students are given priority enrollment until the final day of the previous term. New students will be admitted after that time until a predetermined enrollment count is reached. Consult a program advisor through the department to help plan a course of study that will allow you to achieve your educational goals.

LITERATURE

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7235

Southeast Center
Mt. Scott Hall (MSH), Room 104
971-722-6146

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4266
www.pcc.edu/programs/literature/

DESCRIPTION

Literature classes help students better comprehend cultural complexity as well as help them develop cultural awareness. PCC’s literature program teaches and promotes an understanding of the significance and history of various literatures and fosters an appreciation for the richness and variety of literary texts. Through improving their comprehension and appreciation of written language, students will be more likely to engage actively and effectively in their many communities, as they transfer to universities and/or pursue career technical education. Acknowledging others voices, evaluating authority, recognizing subtle biases and prejudices, integrating the ideas of others with one’s own are all skills essential to active citizenship developed through the study of literature.

The prerequisite for PCC literature courses is placement into WR 121.

All PCC literature courses are transferable to four-year institutions and fulfill the block transfer agreement for the humanities in the General Education requirement for an associate degree. See the Course Description (ENG prefix) section of this catalog for individual Literature courses and course prerequisites.

Students interested in writing courses should consult the Writing section of the catalog.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Machine Manufacturing Technology

One-Year Certificate
CNC Turning
CNC Milling

Less than One-Year: Career Pathway Certificate
Manufacturing Technician
PREREQUISITES AND REQUIREMENTS

It is recommended that degree seeking students entering the MMT program have a score of 21 or higher (MTH 20) in the math portion; 42 or higher (WR 90) on the writing portion; and 66 or higher (RD 90) on the reading portion of the COMPASS test. Students whose first language is not English should take the English test through the English for Speakers of Other Languages (ESOL) Department. Students who place into advanced writing and advanced reading are ready to begin machining courses.

MACHINE MANUFACTURING TECHNOLOGY

AAS DEGREE

Minimum 106 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Machine Manufacturing Technology Degree Credit Summary

MCH 28
MCH Degree Electives 28
General Education 16

Credit Total 106

Machine Manufacturing Technology Degree Courses

MCH 100 Machine Tool Basics 1
MCH 105 Blueprint Reading I 1.5
MCH 110 Blueprint Reading II 1.5
MCH 115 Geometric Dimensioning and Tolerancing 3.5
MCH 120 Machine Shop Math 2
MCH 125 Speeds and Feeds 1
MCH 130 Machine Shop Trigonometry 2.5
MCH 135 Basic Measuring Tools 1.5
MCH 145 Layout Tool 1.5
MCH 150 Precision Measuring Tools 1.5
MCH 160 Drilling Machines and Operations 2
MCH 175 Band Saws 1
MCH 180 Turning Machines and Operations 4
MCH 190 Boring on Lathe 1
MCH 195 Threading on Lathe 3
MCH 205 Vertical Milling Machine 3.5
MCH 225 Surface Grinding Machine and Operations 2
MCH 259 CNC Programming- Lathe 5
MCH 268 CNC Programming- Mill 5
MCH 272 Mastercam I 5
MCH 273 Mastercam II 5
MCH 278 CNC Operations- Mill 4
MCH 279 CNC Operations- Lathe 4
MCH Degree Electives 28
General Education 16

Machine Manufacturing Technology Degree Electives

MCH 101 Occupational Health and Safety 3
MCH 102 Introduction to Manufacturing 3
MCH 121 Manufacturing Processes I 4
MCH 123 Sheet Metal Fabrication 4
MCH 151 Metrology 2
MCH 157 Project Machine Technology I 1.5
MCH 158 Project Machine Technology II 3
MCH 159 Project Machine Technology III 4.5

MCH 210 Project Machine Technology IV 6
MCH 211 Project Machine Technology V 7.5
MCH 212 Project Machine Technology VI 9
MCH 213 Project Machine Technology VII 10.5
MCH 214 Project Machine Technology VIII 12
MCH 215 Horizontal Milling Machines 2.5
MCH 216 Mechanical Inspector 4
MCH 217 Quality Technician 4
MCH 220 Manufacturing Processes II 4
MCH 221 Gears 2
MCH 222 Coordinate Measuring Machine Operation 2
MCH 227 CNC Grinder Operation 2.5
MCH 228 Abrasives 1.5
MCH 229 Rapid Prototyping 5
MCH 235 Tool Sharpening 2
MCH 240 Cutting Tool Technology 2
MCH 245 Metallurgy 2.5
MCH 246 Metallurgy II 4
MCH 247 Manufacturing Process III 3
MCH 248 Metallurgy III 4
MCH 262 CNC Conversational Controls 2
MCH 263 CNC Cycle Time Reduction 1.5
MCH 266 Advanced CNC Programming 3.5
MCH 276 Mastercam Solids 3
MCH 277 Mastercam CNC/CAM Project 3
MCH 280 CE: Machine Technology varied
MCH 282 CNC Router Operation 3
MCH 283 CNC Router Mastercam Programming 3
MCH 284 Computer Aided Manufacturing 3
MCH 285 Computer Integrated Manufacturing 3
MCH 288 Certified Manufacturing Tech Review 4
MCH 289 Certified Manufacturing Engineer Review 4
MCH 290 Mastercam Fundamentals Orientation 1
MCH 291 Laser Cutting and Engraving Fundamentals 1
MCH 292 FDM Additive Manufacturing Fundamentals Orientation 1.5
MCH 293 CNC Router Fundamentals Orientation 1
MCH 294 3 Dimensional Digital Laser Scanning Fundamentals 1.5

CNC TURNING ONE-YEAR CERTIFICATE

Minimum 48.5 credits. Students must meet all certificate requirements. The CNC Turning Certificate is a related certificate. All courses are contained in the Machine Manufacturing Technology AAS Degree.

CNC Turning Certificate Credit Summary

MCH 45.5
MSD 3

Credit Total 48.5

CNC Turning Certificate Courses

MCH 100 Machine Tool Basics 1
MCH 105 Blueprint Reading I 1.5
MCH 110 Blueprint Reading II 1.5
MCH 115 Geometric Dimensioning and Tolerancing 3.5
MCH 120 Machine Shop Math 2
MCH 121 Manufacturing Processes I 4
MCH 125 Speeds and Feeds 1
MCH 130 Machine Shop Trigonometry 2.5
MCH 135 Basic Measuring Tools 1.5
MCH 145 Layout Tools 1.5
MCH 150  Precision Measuring Tools  1.5
MCH 158  Project Machine Technology II  3
MCH 180  Turning Machines and Operations  4
MCH 190  Boring on the Lathe  1
MCH 195  Threading on the Lathe  3
MCH 259  CNC Programming-Lathe  5
MCH 279  CNC Operation-Lathe  4
MCH 280  CE: Machine Technology  4
MSD 115  Improving Working Relations  3

CNC MILLING ONE-YEAR CERTIFICATE
Minimum 49 credits. Students must meet all certificate requirements. The CNC Milling Certificate is a related certificate. All courses are contained in the Machine Manufacturing Technology AAS Degree.

CNC Milling Certificate Credit Summary
MCH  46
MSD  3
Credit Total 49

CNC Milling Certificate Courses
MCH 100  Machine Tool Basics  1
MCH 105  Blueprint Reading I  1.5
MCH 110  Blueprint Reading II  1.5
MCH 115  Geometric Dimensioning and Tolerancing  3.5
MCH 120  Machine Shop Math  2
MCH 121  Manufacturing Processes I  4
MCH 125  Speeds and Feeds  1
MCH 130  Machine Shop Trigonometry  2.5
MCH 135  Basic Measuring Tools  1.5
MCH 145  Layout Tools  1.5
MCH 150  Precision Measuring Tools  1.5
MCH 158  Project Machine Technology II  3
MCH 205  Vertical Milling Machines and Operations  3.5
MCH 268  CNC Programming Mill  5
MCH 272  Mastercam Level I  5
MCH 278  CNC Operation-Mill  4
MCH 280  CE: Machine Technology  4
MSD 115  Improving Working Relations  3

MANUFACTURING TECHNICIAN:
CAREER PATHWAY CERTIFICATE
Minimum 25.5 credits. Students must meet all certificate requirements. The Manufacturing Technician Certificate is a Career Pathway. All courses are contained in the Machine Manufacturing Technology AAS Degree.

MANAGEMENT/SUPERVISORY DEVELOPMENT
Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146, 971-722-6148
Willow Creek Center, Room 307
971-722-2955
www.pcc.edu/programs/management-training

CAREER AND PROGRAM DESCRIPTION
The Management/Supervisory Development Department offers a comprehensive program designed for students and professionals to increase their supervisory skills. Interacting with instructors who are currently managers or consultants, participants develop cutting-edge professional skills that prepare them for job acquisition, retention, and advancement in managerial and supervisory careers. Graduates are prepared to perform functions such as employee training, evaluation, leading and motivating teams, customer service, budgeting, and project management.

AAS Degree graduates transfer to Marylhurst, Oregon Institute of Technology, George Fox and Warner Pacific, among others. For more information about transfer programs, contact the four-year universities as early as possible to ensure a smooth transition.

Management/Supervisory Development courses are offered in a variety of formats, which include distance learning, evening classes on campus, half-day classes of Fridays, and half-day and full-day Saturday classes. The entire degree can be completed online. Consult a program advisor regarding PCC credit for formal training at non-accredited institutions.

See www.pcc.edu/resources/academic/degree-outcome/index.html for AAS Degree and certificate outcomes.

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
Management/Supervisory Development

One-Year Certificate
Management/Supervisory Development

PREREQUISITES AND REQUIREMENTS
College placement test administered through assessment centers is recommended but not required. MTH 63 or MTH 65 must be completed with a C or better.

MANAGEMENT/SUPERVISORY DEVELOPMENT AAS DEGREE
Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.
Management/Supervisory Degree Credit Summary
MSD 40
Remaining General Education 12
MSD Program/Workshop Electives 9
MSD Support Electives 8
BA 7
CIS/BA 4
WR 4
CAS 3
MSD/BA 3
Credit Total 90

Management/Supervisory Degree Courses
BA 211 Principles of Accounting I 3
or
BA 111 Introduction to Accounting 3
CAS 220 Project Management: Beginning MS Project 3
CIS 120 Computer Concepts I* 4
or
BA 131 Computers in Business (4)
MSD 101 Principles of MGMT/SUP 3
MSD 105 Interpersonal Communication 3
MSD 107 Organizations and People 3
MSD 111 Corresponding Effectively at Work 3
MSD 115 Improving Work Relations 3
MSD 117 Customer Relations 3
MSD 121 Leadership Skill Development 3
MSD 130 Creative Problem Solving 3
MSD 200 Organizations and Social Responsibility 3
MSD 206 The Troubled Employee 3
MSD 222 Human Resources Mgmt: Personnel 3
MSD 223 Human Resource Management: Performance and Compensation 3
MSD 279 Project Management - Intro 4
MSD 216 Budgeting for Managers 3
or
BA 177 Payroll Accounting (3)
or
BA 213 Managerial Accounting (4)
WR 121 English Composition 4
MSD Program/Workshop Electives 7

Management/Supervisory Support Electives
CG 140A Career and Life Planning 3
CG 140B Career and Life Planning 2
CG 140C Career and Life Planning 1
CG 191 Exploring Identity and Diversity for College Success 4
Any CAS, CIS, EC, BA, HE, OS and PE courses not found within the course of study for the degree.
* A maximum of 3 PE credits can be applied to this degree

Management/Supervisory Program/Workshop Electives
MSD 110 Gender Conflict Resolution 1
MSD 113 Influence Without Authority 1
MSD 116 Creative Thinking for Innovative Change 1
MSD 119A Intercultural Communication 1
MSD 122 Motivation Without Manipulation 1
MSD 122A Strength Based Leadership 1
MSD 123 Job Search Strategies 1
MSD 123A Innovation and New Products 1
MSD 128 Crisis Intervention: Handling the Difficult Person 1
MSD 133 Brave New Workplace: Strategies to Excel in World of Change 1
MSD 134 Who Moved My Cheese 1
MSD 140 Management Workshops 1
MSD 141A The Time Stress Communication Triangle 1
MSD 148 Asserting Yourself in the Workplace 1
MSD 150 Listening Skills 1
MSD 151 Dealing with Difficult People 1
MSD 157 Conflict Management 1
MSD 159 Stress Control 1
MSD 160A Communication Styles 1
MSD 161 Customer Relations 1
MSD 162 Coping with Angry Feelings and Angry People 1
MSD 164 Better Memos and Letters 1

Management/Supervisory Certificate Courses
BA 211 Principles of Accounting I 3
or
BA 111 Introduction to Accounting (3)
CIS 120 Computer Concepts I 4
or
BA 131 Computers in Business (4)
MSD 101 Principles of MGMT/SUP 3
MSD 105 Interpersonal Communication 3
MSD 107 Organizations and People 3
MSD 111 Corresponding Effectively at Work 3
MSD 115 Improving Work Relations 3
MSD 200 Organizations and Social Responsibility 3
MSD 206 The Troubled Employee 3
MSD 222 Human Resources Mgmt: Personnel 3
MSD 216 Budgeting for Managers 3
or
BA 177 Payroll Accounting (3)
or
BA 213 Managerial Accounting (4)
WR 121 English Composition 4

Management/Supervisory Development One-Year Certificate
Minimum 45 credits. Students must meet all certificate requirements.

Management/Supervisory Certificate Credit Summary
MSD 24
MSD Program/Workshop Electives 7
CIS/BA 4
WR 4
BA 3
MSD/BA 3
Credit Total 45

*Could be used as General Education

Note: Career technical areas. See MSD advisor for qualifying elective course selection in career technical areas.
MSD 174  Time Management  1
MSD 174B  Leadership and Effective Decision Making  1
MSD 175B  Direct Communication in the Workplace  1
MSD 176  Nonverbal Communication  1
MSD 176A  Interpersonal Communication  1
MSD 177  Team Building  1
MSD 177B  Coaching Great Performance  1
MSD 179B  Avoid Burnout: Build Resilience  1
MSD 180A  Goal Setting and Productivity  1
MSD 187  Humor in the Workplace  1
MSD 188B  Self Management for Success  1
MSD 192A  Project Management  1
MSD 193  Self Esteem the Key to Success  1
MSD 193A  Leadership Skill Development  1
MSD 194  Effective Presentation Skills  1
MSD 198A  Male/Female Communication Style Differences  1
MSD 198B  Exploring 7 Habits of Highly Effective People  1
MSD 202  Training the Employee  3
MSD 280A  CE: Mgmt/Supervisory Development  3
MSD 280B  CE: Mgmt/Supervisory Development- Seminar  1
MSD 298  Trends in Management and Supervision  6

A maximum of 9 1-credit workshops/courses may be used toward a program award, certificate or degree.

PROGRAM AWARDS

MANAGEMENT/SUPERVISORY DEVELOPMENT
Minimum of 18 credits of management/supervisory development courses are required: 6 credits of core courses, MSD 101, and MSD 111, MSD 105 and MSD 206 and 6 credits from other MSD offerings.

CHANGE/INNOVATION MANAGEMENT
Minimum of 18 credits to include MSD 101,121,130,116,133 and 7 other MSD credits.

CONFLICT MANAGEMENT
Minimum of 18 credits to include MSD 105, 130, 206, 157 and 8 additional MSD credits.

LEADERSHIP
Minimum of 18 credits to include MSD 101, 105,107, MSD1  2  1 and 6 additional MSD credits.

PROJECT MANAGEMENT
Minimum of 18 credits are required: 12 credits of core courses, MSD 105, 123A, 174, 279 and CAS 220 and an additional 6 credits from the following courses: BA 255, CIS 245, MSD 121, 116, 177, 177B

CUSTOMER SERVICE MANAGEMENT
Minimum of 18 credits to include MSD 105,115,116,117,151 and 7 additional MSD credits.

HUMAN RESOURCE MANAGEMENT
Minimum of 18 credits to include MSD 105, 222, 223,115, and 6 additional MSD credits.

MATHMATICS

Cascade Campus
Student Services Building (SSB) Room 300
971-722-5677 or 971-722-5454

Rock Creek Campus
Building 2, Room 244
971-722-7605 or 971-722-7606

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6149

Sylvania Campus
Science Technology Building (ST), Room 104
971-722-4149 or 971-722-4172

DESCRIPTION
Mathematics includes the study of numbers, patterns, graphs, and abstract models using analytic reasoning and systematic problem solving skills. Mathematics and mathematical reasoning are used in situations as diverse as household budgeting and space shuttle design, subjects as different as art and law, and occupations as varied as nursing and computer programming. Mathematics can be used by everyone to enhance their understanding of the world.

PCC offers developmental and pre-college math courses (numbered below 100) that focus on algebraic skills and prepare students for certificate programs, two year degree programs, and college level coursework. Math courses at PCC numbered 100 and above are equivalent and transferable to the similarly numbered courses at Oregon's public universities. All math classes at PCC are designed to challenge students to improve their analytic reasoning, problem solving, and communication skills.

MECHANICAL ENGINEERING TECHNOLOGY

Sylvania Campus
Science Technology Building (ST), Room 208
971-722-4159

www.pcc.edu/met

CAREER AND PROGRAM DESCRIPTION
Mechanical engineering technicians are problem-solvers, working as part of a team involved in the planning, design, manufacture, operation, and management of many types of systems. These may include machines and machine tools, conventional and renewable energy systems, manufacturing processes, HVAC systems, and gas and liquid distribution systems. These skilled professionals work on a variety of assignments including: design calculations, computer-aided drafting and solid modeling, quality assurance testing, applications engineering, specification writing, technical sales, scheduling, and training, among others. Employers of MET’s include consulting engineering firms, manufacturers, government agencies, and equipment sales organizations.

The PCC Mechanical Engineering Technology program is designed to develop marketable skills in a broad range of techni-
cal areas, and in problem analysis and solution, spoken and written communication, computer software use, and computer-aided drawing. While providing a curriculum strong in mathematics and engineering topics, our teaching format also emphasize student involvement, teamwork, and extensive student-instructor interaction.

DEGREES AND CERTIFICATES OFFERED:

Associate of Applied Science Degree
   Mechanical Engineering Technology
   Mechanical Engineering Technology: Green Technology and Sustainability Option

Two-Year Certificate
   Mechanical Engineering Technology

PREREQUISITES AND REQUIREMENTS

All students must have an advising interview with a MET faculty advisor.

Mechanical Engineering Technology AAS requirements:
1. WR 115 or equivalent placement test score
2. MTH 60 or higher, or equivalent placement test score

Mechanical Engineering Technology: Green Technology and Sustainability AAS requirements:
1. WR 121 or equivalent placement score
2. MTH 60 or higher, or equivalent placement test score.

Mechanical Engineering Technology Certificate requirements:
1. Placement into WR 115
2. Completed MTH 60 or higher

High school courses in chemistry and physics are helpful but not required. Skill in keyboarding is highly recommended. A specific calculator is required.

For students not meeting these requirements, advising is available to assist in preparing for entrance into the program and to earn credits which will apply toward the certificate or degree once accepted into the program.

Full-time students: MET is a limited enrollment program for students seeking a certificate or degree. Qualified applicants are accepted in the order in which the application process is completed. Program starts in fall and winter terms. See a program advisor for course planning.

Job-upgrade students: non-program students seeking to upgrade job skills are welcome to enroll in individual courses. Students must meet individual course prerequisites and complete an advising interview with a MET faculty advisor prior to enrollment. Admission is granted on a space-available basis after the needs of the full-time students have been met.

Continuing Education Students: students may transfer to Oregon Institute of Technology to pursue a bachelor degree in mechanical or manufacturing engineering technology. Faculty advisors will provide assistance in the selection of additional course work appropriate for each student's goals.

Completion of CMET 131 with a C grade or higher will meet the PCC math competency requirement for the AAS degree.

MECHANICAL ENGINEERING TECHNOLOGY
AAS DEGREE

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Mechanical Engineering Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>CMET 110</td>
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<td>CMET 111</td>
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<td>CMET 112</td>
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<td>CMET 113</td>
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<td>CMET 114</td>
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<td>CMET 121</td>
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<td>CMET 122</td>
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<td>CMET 123</td>
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<td>CH 104</td>
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<td>CMET 131</td>
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<td>CMET 227</td>
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<td>WR 121</td>
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<td>General Education</td>
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<td>CMET 280A</td>
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</tbody>
</table>

Credit Total 101

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- CMET 110: Statics 4
- CMET 111: Engineering Technology Orientation 4
- CMET 112: Technical Algebra and Trigonometry 4
- CMET 113: Engineering Technology Graphics 3

Second Term
- CMET 121: Strength of Materials 4
- CMET 122: Technical Engineering Physics 4
- CMET 123: Technical Algebra with Analytic Geometry 4
- CH 104: Allied Health Chemistry I* 5

Third Term
- CMET 131: Applied Calculus 8
- CMET 227: Applied Electricity Fundamentals 2
- WR 121: English Composition 4
- General Education 4
- CMET 280A: Cooperative Education, available any term after completing term three (optional)

Fourth Term
- CMET 226: Dynamics 3
- CMET 133: Materials Technology 3
- CMET 221: Environmental Systems 4
- CMET 213: Fluid Mechanics 3
- SP 100: Intro to Speech Communication* 4
- or SP 111: Public Speaking* (4)

Fifth Term
- CMET 215: Manufacturing Processes 3
- CMET 212: Thermodynamics I 4
- CMET 211: Environmental Quality 4
- CMET 241: Structural Steel Drafting 3
- CMET 254: CMET Seminar 1
- General Education 3

Sixth Term
- CMET 235: Machine Design 3
- CMET 237: MET Applied Computer Aided Design 3
- CMET 222: Thermodynamics II 4
- CMET 223: Project Management 3
- CMET 236: Structural Design 3

*Could be used as General Education
GREEN TECHNOLOGY AND SUSTAINABILITY AAS DEGREE

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Green Technology and Sustainability Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<td>CMET</td>
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<td>Remaining General Education</td>
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<td>CH</td>
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<td>GEO</td>
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<tr>
<td>SOC</td>
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<tr>
<td>SP</td>
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<td>EET</td>
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Credit Total 108

Green Tech and Sustainability Degree Courses

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
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<tr>
<td>First Term</td>
<td>CMET 104</td>
<td>Allied Health Chemistry I*</td>
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<td>CMET 110</td>
<td>Statics</td>
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<td></td>
<td>CMET 111</td>
<td>Engineering Technology Orientation</td>
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<tr>
<td></td>
<td>CMET 112</td>
<td>Technical Algebra and Trigonometry</td>
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<td></td>
<td>CMET 113</td>
<td>Engineering Technology Graphics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CMET 121</td>
<td>Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CMET 122</td>
<td>Technical Engineering Physics</td>
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</tr>
<tr>
<td></td>
<td>CMET 123</td>
<td>Technical Algebra with Analytic Geometry</td>
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<td></td>
<td>CMET 131</td>
<td>Applied Calculus</td>
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<td>CMET 133</td>
<td>Materials Technology</td>
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<td>CMET 211</td>
<td>Environmental Quality</td>
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<td>CMET 212</td>
<td>Thermodynamics I</td>
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<tr>
<td></td>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
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<td></td>
<td>CMET 215</td>
<td>Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CMET 221</td>
<td>Environmental Systems</td>
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<tr>
<td></td>
<td>CMET 222</td>
<td>Thermodynamics II</td>
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<td></td>
<td>CMET 223</td>
<td>Project Management</td>
<td>3</td>
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<td>CMET 226</td>
<td>Dynamics</td>
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<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
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<td>CMET 235</td>
<td>Machine Design</td>
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<td>CMET 236</td>
<td>Structural Design</td>
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<td>CMET 237</td>
<td>MET Applied Computer Aided Design</td>
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<td>CMET 241</td>
<td>Structural Steel Drafting</td>
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<td>CMET 254</td>
<td>CMET Seminar</td>
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<td></td>
<td>EET 110</td>
<td>Introduction to Renewable Energy</td>
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<td>GEO 265</td>
<td>Introduction to GIS*</td>
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<td></td>
<td>SOC 228</td>
<td>Introduction to Environmental Sociology*</td>
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<tr>
<td></td>
<td>SP 100</td>
<td>Intro to Speech Communication*</td>
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<tr>
<td></td>
<td>or SP 111</td>
<td>Public Speaking*</td>
<td>(4)</td>
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<tr>
<td></td>
<td>Remaining General Education</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>CMET 280A</td>
<td>Cooperative Education, available any term after completing term three (optional)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MECHANICAL ENGINEERING TECHNOLOGY TWO-YEAR CERTIFICATE

Minimum 67 credits. Students must also meet certificate requirements. The Mechanical Engineering Technology Certificate is a related certificate. All courses are contained in the Mechanical Engineering Technology AAS Degree.

Mechanical Engineering Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET</td>
<td>50</td>
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<tr>
<td>CH</td>
<td>5</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Total 67

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>Statics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 111</td>
<td>Engineering Technology Orientation</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112</td>
<td>Technical Algebra and Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>CMET 113</td>
<td>Engineering Technology Graphics</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 121</td>
<td>Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122</td>
<td>Technical Engineering Physics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123</td>
<td>Technical Algebra with Analytic Geometry</td>
<td>4</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 131</td>
<td>Applied Calculus</td>
<td>8</td>
</tr>
<tr>
<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>(Social Science)</td>
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</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 226</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CMET 133</td>
<td>Materials Technology</td>
<td>3</td>
</tr>
<tr>
<td>CMET 221</td>
<td>Environmental Systems</td>
<td>4</td>
</tr>
<tr>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>SP 100</td>
<td>Intro to Speech Communication*</td>
<td>4</td>
</tr>
<tr>
<td>or SP 111</td>
<td>Public Speaking*</td>
<td>(4)</td>
</tr>
</tbody>
</table>

MEDICAL ASSISTING

Cascade Campus
Student Services Building (SSB), Room 318
971-722-5667
www.pcc.edu/ma

CAREER AND PROGRAM DESCRIPTION

Those training in the Medical Assisting Program will find occupations involved with administrative and clinical aspects of health care in clinics and physicians' offices. The medical assistant performs a variety of clinical and administrative duties. Clinical duties may include: assisting physicians and preparing patients for examinations; taking and recording vital signs and medical histories; performing venipuncture, spirometry, and electrocardiograms; preparing, administering and documenting medications; collecting and processing specimens. Administrative duties may include: scheduling and receiving patients; maintaining medical records; handling telephone calls; correspondence and reports; insurance matters; office accounts; fees and collections.
Students are prepared to function under the supervision of a licensed physician. The program is accredited by the Commission on Accreditation of Allied Health Educational Programs (CAA-HEP), on recommendation of the Committee on Accreditation for Medical Assistants Education. Graduates are eligible to take the national certifying examination given through the American Association of Medical Assistants. Individuals who have been found guilty of a felony or pleaded guilty to a felony, may not be eligible to take the Certified Medical Assistance Examination (CMA-AAMA). However, the certifying board may grant a waiver based on mitigating circumstances. See the American Association of Medical Assistance (AAMA) CMA Examination Application for specifics.

Students may enter the Medical Assistant program either in the fall or spring terms. Students must receive a C or better in all program required courses. The program is designed to correlate classroom and laboratory experience with practical experience in health care facilities.

**DEGREES AND CERTIFICATES OFFERED**

**One-Year Certificate**

Medical Assisting

**PREREQUISITES AND REQUIREMENTS**

1. High school completion or GED.

2. Completion of WR 121, MTH 60, BI 121, and MP 111

3. Students must demonstrate a working knowledge and/or background of basic computer skills including windows, keyboarding, Internet and e-mail. Students not able to demonstrate a working knowledge and/or background will be required to take a course(s) prior to admission.

4. Students must meet with a Medical Assisting Program advisor prior to entry.

5. Students must have transportation to clinical facilities throughout the Portland Metropolitan area and surrounding communities.

6. Two statements of recommendation from a recent employer, or advisor.

7. A criminal background check and drug screen. Contact the department office for more information.

Acceptance into the medical assisting program requires that students meet the Compass placement scores and demonstrate satisfactory English language ability through a written and oral interview assessment. Students also must have documentation of the following prior to the beginning of the third term: satisfactory physical examination, current immunizations, Mantoux Test, evidence of immunity to measles and evidence of initiating the immunization series to Hepatitis B or sign a waiver. Qualified applicants are accepted in the order in which the application process is completed. For more information call the department office.

**MEDICAL ASSISTING ONE-YEAR CERTIFICATE**

Minimum 47 credits. Students must meet certificate requirements.

**Medical Assisting Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 122 Intro to Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>HE 113 First Aid and Professional CPR</td>
<td>1</td>
</tr>
<tr>
<td>MA 112 Medical Office Assistant Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>MA 117 Medical Office Administration Procedures</td>
<td>3</td>
</tr>
<tr>
<td>MA 118 Medical Office Administration Procedures Lab</td>
<td>2</td>
</tr>
<tr>
<td>MA 120 Intro to Clinical Phlebotomy</td>
<td>1</td>
</tr>
<tr>
<td>PSY 101 Psychology and Human Relations</td>
<td>4</td>
</tr>
<tr>
<td>MA 180 Coding and Reimbursement</td>
<td>2</td>
</tr>
<tr>
<td>MA 122 Medical Office Assistant Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>MA 123 Medical Office Clinical Procedures</td>
<td>3</td>
</tr>
<tr>
<td>MA 124 Medical Office Clinical Procedures Lab</td>
<td>2</td>
</tr>
<tr>
<td>MLT 100 Medical Office Lab Orientation</td>
<td>3</td>
</tr>
<tr>
<td>MP 150 Intro to Electronic Health Records</td>
<td>3</td>
</tr>
<tr>
<td>MA 131 Introduction to Medical Science</td>
<td>5</td>
</tr>
<tr>
<td>MA 132 Medical Office Assistant Seminar III</td>
<td>1</td>
</tr>
<tr>
<td>MA 136 Medications</td>
<td>2</td>
</tr>
<tr>
<td>MA 270 Clinical Practicum</td>
<td>6</td>
</tr>
<tr>
<td>MP 140 Medical Law and Professional Standards</td>
<td>3</td>
</tr>
</tbody>
</table>

**Credit Total** 47

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 122 Intro to Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>HE 113 First Aid and Professional CPR</td>
<td>1</td>
</tr>
<tr>
<td>MA 112 Medical Office Assistant Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>MA 117 Medical Office Administration Procedures</td>
<td>3</td>
</tr>
<tr>
<td>MA 118 Medical Office Administration Procedures Lab</td>
<td>2</td>
</tr>
<tr>
<td>MA 120 Intro to Clinical Phlebotomy</td>
<td>1</td>
</tr>
<tr>
<td>PSY 101 Psychology and Human Relations</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 180 Coding and Reimbursement</td>
<td>2</td>
</tr>
<tr>
<td>MA 122 Medical Office Assistant Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>MA 123 Medical Office Clinical Procedures</td>
<td>3</td>
</tr>
<tr>
<td>MA 124 Medical Office Clinical Procedures Lab</td>
<td>2</td>
</tr>
<tr>
<td>MLT 100 Medical Office Lab Orientation</td>
<td>3</td>
</tr>
<tr>
<td>MP 150 Intro to Electronic Health Records</td>
<td>3</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 131 Introduction to Medical Science</td>
<td>5</td>
</tr>
<tr>
<td>MA 132 Medical Office Assistant Seminar III</td>
<td>1</td>
</tr>
<tr>
<td>MA 136 Medications</td>
<td>2</td>
</tr>
<tr>
<td>MA 270 Clinical Practicum</td>
<td>6</td>
</tr>
<tr>
<td>MP 140 Medical Law and Professional Standards</td>
<td>3</td>
</tr>
</tbody>
</table>

**MEDICAL IMAGING**

Sylvania Campus
Health Technology Building (HT), Room 306
971-722-4227, 971-722-4795

[www.pcc.edu/rad](http://www.pcc.edu/rad)

**CAREER AND PROGRAM DESCRIPTION**

**Radiography Program**

Radiographers are important members of the health care team and work closely with physicians and particularly with radiologists. The radiographer is primarily concerned with providing diagnostic radiographic images (x-rays) of disease and injury and assisting in patient care. The radiographer may be employed in hospitals, clinics and medical offices.

Radiography graduates may apply to take the national certifying examination offered by the American Registry of Radiologic Technologists (ARRT) and for licensure as a radiographer in the state of Oregon. Students are required to satisfactorily complete
the course of study with a C or better in each required course and must maintain an overall grade point average of 2.0 for graduation.

PCC’s program begins each June with an introductory course. The Radiography Program is nine terms in length (27 consecutive months). The program combines campus instruction with clinical education at affiliated hospitals in the Portland area. This program is designed to prepare the student for certification as a Registered Technologist in Radiography, R.T. (R).

CT Technologist Training Program
CT Technologists are important members of the health care team and work closely with Radiologists to produce diagnostic CT images. Computed Tomography requires additional training beyond the primary certification earned in Radiography. Nuclear Medicine Technologists who will perform PET/CT may enroll in this program, which meets the State of Oregon requirements for CT Training.

The CT Technologist Training Program is four terms in length (12 consecutive months). The program combines campus instruction with clinical education at affiliated hospitals. Students are required to satisfactorily complete the course of study with a C or better in each didactic course and a B or better in the clinical courses. Upon completion of this program, students will be qualified to sit for the national CT certification examination offered by the American Registry of Radiologic Technologists (ARRT).

Special admission required for registration. Applicants must be registry eligible or currently registered, in good standing, in Radiography or Nuclear Medicine to apply to the program. Acceptance into the program is based on clinical seat availability which varies from year to year.

MRI Technologist Training Program
MRI Technologists are important members of the health care team and work closely with Radiologists to produce diagnostic MR images. Magnetic Resonance Imaging requires additional training beyond the primary certification earned in Radiography, Nuclear Medicine, Ultrasound or Radiation Therapy. Upon completion of this program, students will be qualified to sit for the national MRI certification examination offered by the American Registry of Radiologic Technologists (ARRT). Students are required to satisfactorily complete the course of study with a C or better in each required course.

The MRI Technologist Training Program is three terms in length (9 consecutive months). The program combines campus instruction with clinical education at affiliated hospitals. Applicants must be a Registered Radiologic Technologist ARRT(R), Registered Nuclear Medicine Technologist ARRT(N) or (CNMT), Registered Radiation Therapy Technologist ARRT(T) or Registered Medical Sonographer (RDMS) in good standing with one-year experience preferred. Technologists with less than one year experience may be admitted with Director permission. Refer to College catalog for program curriculum.

Medical Imaging Continuing Education Courses
College credit courses are available to A.R.R.T certified technologists for updating and re-entry knowledge and skills. See the Medical Imaging website for specific offerings each term. Special admission required for registration. Contact the Medical Imaging department for information at 971-722-4227.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Radiography

Less than One-Year Certificate
Computed Tomography
Magnetic Resonance Imaging

PREREQUISITES AND REQUIREMENTS

Radiography Program
All program applicants must have a high school diploma or a GED certificate. In addition, all applicants will be required to have satisfactorily (C grade minimum) completed WR 121, MTH 111, BI 231, 232 and 233, MP 111 or the equivalent. Pass/No Pass grade is not acceptable in prerequisites. The Radiography Program does not require a computer science prerequisite; however, success in a Radiography Program requires that students be computer literate, including, at least, word processing, use of spreadsheets and web searches. Students with no computer experience should discuss with an advisor ways to achieve competency prior to entering the Radiography Program. BI 231, BI 232, BI 233 and MTH 111 must be current within seven years of application. All prerequisites must be completed by end of winter term in the year in which you apply.

Potential applicants are encouraged but not required to gain health care experience by volunteering or working in the health care industry, preferably in a hospital setting to gain knowledge of professional duties and responsibilities.

The Radiography Program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission.

For specific application procedures contact the Health Admissions Office. Applications are accepted February 1 through the first Monday in April. During April and May the top applicants will be assigned to clinical affiliates for observation and interviews with clinical instructors. Selection will occur in late May. A brief orientation meeting will be held in late June. All students must be formally admitted in order to enroll in the radiography courses. Other enrollees must have program permission.

Once accepted to the program, students will be required to submit to a criminal background check and a drug screen for their clinical practicum. Students must be able to provide a valid Social Security number for the criminal background check. Proof of immunizations will also be required. For a complete listing of required immunizations, please visit our website at www.pcc.edu/rad.

During the course of the program students will be working with ionizing radiation, processing chemicals and they will provide patient care to individuals who may have contagious diseases. Special immunization is required.

CT Technologist Training Program
Applicants must be registry eligible or currently registered, in good standing, in Radiography ARRT(R) or Nuclear Medicine ARRT(N) or (CNMT) to apply to the program.

The CT Technologist Training Program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission. Applications for admission are accepted August 1st through the 2nd Friday in September, by 5:00 p.m. Applications can be mailed to the Health Admissions Office in HT 205, phone 971-722-4908. All
students must be formally admitted in order to enroll in the Computed Tomography courses. Other enrollees must have program permission.

Once accepted to the program, students will be required to submit to a criminal background check and a drug screen for their clinical practicum. Students must be able to provide a valid Social Security Number for the criminal background check. Proof of immunizations may also be required. For a complete list of required immunizations, please visit the Medical Imaging website.

MRI Technologist Training Program
Applicants must be a Registered Radiologic Technologist ARRT(R), Registered Nuclear Medicine Technologist ARRT(N) or (CNMT), Registered Radiation Therapy Technologist ARRT(T) or Registered Medical Sonographer (RDMS) in good standing with one-year experience preferred. Technologists with less than one year experience may be admitted with Director permission.

The MRI Technologist training program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission. Applications for admission are accepted March 1st through the 2nd Friday in April, by 5:00 p.m. Applications can be mailed to the Health Admissions Office in HT 205, phone 971-722-4908.

Once accepted to the program, students will be required to submit to a criminal background check and a drug screen for their clinical practicum. Students must be able to provide a valid Social Security Number for the criminal background check. Proof of immunizations may also be required. For a complete list of required immunizations, please visit the Medical Imaging website.

RADIOGRAPHY AAS DEGREE
Minimum 119 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Radiography Degree Credit Summary
RAD 102
General Education 16
HE 1
Credit Total 119

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

Summer Term
RAD 100 Introduction to Radiology 2

First Term
RAD 101 Radiographic Positioning I 3
RAD 105 Methods of Patient Care 3
RAD 106 Radiographic Equipment I 4
RAD 110 Radiographic Clinic I 4
HE 110 CPR/AED for the Professional Rescuer 1

Second Term
RAD 102 Radiographic Positioning II 3
RAD 107 Radiographic Equipment II 4
RAD 115 Principles of Exposure I 3
RAD 120 Radiographic Clinic II 4.5

Third Term
RAD 103 Radiographic Positioning III 3
RAD 122 Radiation Protection - Biology 3
RAD 130 Radiographic Clinic III 4.5
RAD 132 Radiographic Image Production 3
General Education 4

Fourth Term
RAD 140 Radiographic Clinic IV 10
General Education 4

Fifth Term
RAD 203 Applied Radiography Topics 2
RAD 209 Advanced Radiographic Procedures 2
RAD 210 Radiographic Clinic V 6.5
RAD 215 Principles of Exposure II 3
General Education 4

Sixth Term
RAD 205 Radiographic Positioning V 3
RAD 211 Advanced Imaging Modalities 4
RAD 220 Radiographic Clinic VI 6.5
General Education 4

Seventh Term
RAD 206 Survey of Medical Imaging Diseases 3
RAD 230 Radiographic Clinic VII 9

Eighth Term
RAD 240 Radiographic Clinic VIII 7
RAD 216 Radiography Registry Review 2

COMPUTED TOMOGRAPHY
LESS THAN ONE-YEAR CERTIFICATE
Minimum 19 credits. Students must meet certificate requirements.

Computed Tomography Certificate Credit Summary
CTT 19
Credit Total 19

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
CTT 101 Sectional Anatomy-Abdomen/Pelvis 1
CTT 102 Sectional Anatomy-Head/Spine 1
CTT 111 CT Physics, Equipment and Instrumentation 2

Second Term
CTT 103 Sectional Anatomy-Neck/Thorax 1
CTT 104 Cross Sectional Anatomy Review 1
CTT 112 CT Protocols, Procedures and Pathology Correlation 2

Third Term
CTT 271 CT: Clinical Education I 5

Fourth Term
CTT 113 CT Registry Review 1
CTT 272 CT Clinical Education II 5
MAGNETIC RESONANCE IMAGING LESS THAN ONE YEAR CERTIFICATE

Minimum 32 credits. Students must meet certificate requirements.

Magnetic Resonance Imaging Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRI 101 MRI Physics I-Principles, Equipment and Safety</td>
<td>2</td>
</tr>
<tr>
<td>MRI 111 MRI Cross-Sectional Anatomy I</td>
<td>2</td>
</tr>
<tr>
<td>MRI 271 MRI Clinical Education I</td>
<td>6</td>
</tr>
<tr>
<td>MRI 102 MRI Physics II Advanced Principles</td>
<td>2</td>
</tr>
<tr>
<td>MRI 112 MRI Cross-Sectional Anatomy II</td>
<td>1</td>
</tr>
<tr>
<td>MRI 272 MRI Clinical Education II</td>
<td>8</td>
</tr>
<tr>
<td>MRI 130 MRI Imaging Procedures and Diagnosis</td>
<td>2</td>
</tr>
<tr>
<td>MRI 140 MR Registry Review</td>
<td>1</td>
</tr>
<tr>
<td>MRI 273 MR Clinical Education III</td>
<td>8</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

- MRI 101 MRI Physics I-Principles, Equipment and Safety: 2 credits
- MRI 111 MRI Cross-Sectional Anatomy I: 2 credits
- MRI 271 MRI Clinical Education I: 6 credits

Second Term

- MRI 102 MRI Physics II Advanced Principles: 2 credits
- MRI 112 MRI Cross-Sectional Anatomy II: 1 credit
- MRI 272 MRI Clinical Education II: 8 credits

Third Term

- MRI 130 MRI Imaging Procedures and Diagnosis: 2 credits
- MRI 140 MR Registry Review: 1 credit
- MRI 273 MR Clinical Education III: 8 credits

MEDICAL LABORATORY TECHNOLOGY

Cascade Campus
Health Professions Admissions
Jackson Hall (JH), Room 210
971-722-5209
www.pcc.edu/mlt

CAREER AND PROGRAM DESCRIPTION

A medical laboratory technician performs routine clinical laboratory testing procedures to provide scientific information needed in diagnosis, prognosis and treatment of disease. Technicians use sophisticated instrumentation for these evaluations, which encompass quantitative and qualitative chemical and biological analyses of body specimens. Technicians function under the supervision of a qualified practitioner. The local metropolitan area offers very good employment opportunities and jobs are readily available in smaller communities throughout the country. Opportunities are available in hospitals, independent laboratories, research and industry for graduates of the program.

To successfully participate in the MLT Program and become employable, the student must be able to perform essential functions expected of the profession. Examples of essential functions for the MLT are communication, vision, manual dexterity, physical activity, analytical skills and technical aptitude.

Because of limited laboratory space and clinical facilities as well as the delicate balance of job opportunities in medical laboratory science, the MLT Program has a limited enrollment. Eligibility for entry into the first year of the program is based on Compass scores in algebra and English, and achievement examinations in chemistry and biology, or equivalent courses.

It is strongly recommended that applicants have completed high school chemistry, biology, algebra and English or their equivalents. Students should not interpret acceptance into the first year of the program as automatic progression to the second year of the program. Continuation into the second year is contingent upon performance during the first year. Each student entering into the second year is required to complete the student health assessment examination form provided by the MLT Department. Contact the department for any additional requirements.

The Medical Laboratory Technology Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631, telephone 773-714-8880.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Medical Laboratory Technology

PREREQUISITES AND REQUIREMENTS

College placement tests are administered through assessment centers.

1. Completion of WR 115 with a C grade or better or placement into WR 121.
2. Completion of RD 115 with a C grade or better, or equivalent placement test score.
3. Completion of MTH 95 with a C grade or better or placement into MTH 111.
4. Completion of 100 level Biology or higher course with a C grade or better or pass biology examination given by the MLT department.
5. Completion of 100 level Chemistry or higher course with a C grade or better or pass a chemistry examination provided by the MLT department.
6. High School diploma or GED

During the first term of the MLT Program students must show evidence of beginning the Hepatitis B immunization series or sign a waiver acknowledging the risk factors involved without the immunization. The second year of the MLT Program has additional health and immunization requirements. Please contact the department for more information.

Students are required to pass a criminal background check and urine drug screen. Contact the department office for more information.

Students planning to enroll in the MLT Program should contact the Health Professions Admissions Office for specific eligibility requirements and an appointment for a program advising session. Because of the unique responsibilities involved in the practice of clinical laboratory science, the MLT Department reserves the right to require that a student who appears to the department unsuited for clinical laboratory science be counseled into another area of study.

Students are prepared to perform routine clinical laboratory tests under the supervision of a pathologist, medical technologist or physician. The program combines on-campus instruction in fundamental principles with clinical experiences gained through rotation in clinical laboratories. The clinical laboratories affiliated...
with the MLT Program include Kaiser Permanente, Legacy Health System, St. Charles Medical Center, Oregon Health and Sciences University, Peace Health, Sisters of Providence Health System, Tuality Health Care Hospital and Asante Health System.

Students enrolled in the MLT Program will be required to use medical devices and follow safety precautions of the clinical laboratory. Students who have a health, physical or psychological problem which may affect or be affected by the use of the devices or precautions should contact the department prior to entering the program. Graduates are eligible to sit for national examinations for certification given by several agencies.

Only those students who have been officially accepted into the first year of the MLT Program may enroll in MLT 111, MLT 112 and MLT 113.

MEDICAL LABORATORY TECHNOLOGY AAS DEGREE

Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Medical Laboratory Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLT</td>
<td>70</td>
</tr>
<tr>
<td>CH</td>
<td>15</td>
</tr>
<tr>
<td>BI</td>
<td>8</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Remaining General Ed</td>
<td>6</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>103</strong></td>
</tr>
</tbody>
</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
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Second Term

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Third Term

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Fifth Term

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<td>MLT 262</td>
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Sixth Term

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<td>MLT 263</td>
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<td>MLT 264</td>
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Seventh Term

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<td>MLT 274</td>
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*Courses marked with asterisk (*) may be used as General Education

**Could be used as General Education

1 Or a lower division collegiate writing course for which WR 121 is a prerequisite. 
2 (CH 221, 222, 223) may be taken in place of chemistry requirement. 
3 (BI 211, 212, 213) or (BI 231, 232, 233) may be taken in place of biology requirement.

MICROELECTRONICS TECHNOLOGY

Rock Creek Campus
Science and Technology Division Office
Building 7, Room 202
971-722-7255
www.pcc.edu/mt

CAREER AND PROGRAM DESCRIPTION

Semiconductor manufacturing technicians work in clean room environments to maintain equipment, and monitor various manufacturing processes. Technicians must wear clean room suits and follow strict procedures in order to reduce particle count in the manufacturing environment. They must also follow safety procedures when handling process chemicals and gases. Technicians in this fast moving industry must have a broad range of skills and knowledge including strong backgrounds in mathematics, chemistry and physics. Good communication skills in the English language are required to function in team-oriented organizations that are becoming standard in the industry.

Potential employers of program graduates include Intel Corporation, Oregon’s largest high-tech employer, SolarWorld, Maxim, FEI, TriQuint Semiconductor, Microchip, and other wafer and integrated circuit manufacturers.

For students continuing their education beyond the Associate of Applied Science Degree in Microelectronics Technology, up to 58 credits can apply toward a four-year baccalaureate degree.

Graduates of the Microelectronics Technology Program may also transfer to Oregon Institute of Technology to pursue a bachelor degree in Electronic Engineering Technology. Upper division OIT courses are offered at OIT’s Metro Campus in Portland. (See notes following the course listing.)
PROGRAMS & DISCIPLINES

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
- Microelectronics Technology
- Microelectronics Technology: Automated Manufacturing Technology Option
- Microelectronics Technology: Solar Voltaic Manufacturing Technology Option

Less than One-Year: Career Pathway Certificate
- Solar Voltaic Manufacturing Technology

PREREQUISITES AND REQUIREMENTS

Students new to the program must take the college's placement examinations for mathematics and English prior to program advising and registration. Students must meet the prerequisites as stated in the course descriptions of the current catalog before registering for first term microelectronics, electronics and chemistry courses. Students intending to pursue any of the three AAS MT degrees must place into MTH 95 and WR 121. New students are encouraged to meet with a department representative for advising prior to signing up for classes.

Study begins by laying a solid foundation in mathematics, chemistry, physics, and electronics before introducing topics in semiconductor manufacturing, process equipment, and vacuum/plasma technology. Instructional time is divided between classroom presentations and lab exercises to develop equipment analysis, maintenance, and troubleshooting skills. Students also develop oral and written communication skills in the English language. The ability to communicate is needed to be able to function effectively in work teams.

Day courses are scheduled so that one section of a course meets on Monday and Tuesday and another section meets on Thursday and Friday, enabling those students working compressed-workweek schedules to take courses. Evening courses are also available for 100 level courses.

Full-time day students can complete the program in six to eight terms. However, many students elect to take a part-time course load and take longer to complete the program. The core MT classes require two full academic years (six terms) in order to be completed.

Students may begin during any term of the academic year however first year sequences must start in fall or winter term. Second year sequences must begin in fall term.

Students interested in obtaining a Solar Voltaic Manufacturing Technology Career Pathway Certificate must be able to prove their competency in MTH 65 and WR 115

Note: Students intending to transfer to OIT should:

1. Complete both MTH 243 and MTH 244 at PCC.
2. General Education: Select one course from PCC's General Education course list for social sciences and one course from PCC's General Education course list for Arts and Letters, except: ESOL courses, first year languages, speech, writing courses and PHL 197. MTH 95, a pre-college course, does not apply toward the OIT bachelor degree. SP 130 will substitute for OIT's SP 111 General Education requirement for the Microelectronics Program only per approval of OIT's Academic Council.

MICROELECTRONICS TECHNOLOGY

AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Microelectronics Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>First Term</td>
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</tr>
<tr>
<td>MT 101 Introduction to Semiconductor Mfg</td>
<td>1</td>
</tr>
<tr>
<td>MT 102 Introduction to Semiconductor Devices</td>
<td>1</td>
</tr>
<tr>
<td>MT 103 Introduction to Micro and Nano Processing</td>
<td>1</td>
</tr>
<tr>
<td>MT 111 Electronic Circuits and Devices I</td>
<td>4</td>
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<tr>
<td>Second Term</td>
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</tr>
<tr>
<td>CH 221 General Chemistry I*</td>
<td>5</td>
</tr>
<tr>
<td>MT 112 Electronic Circuits and Devices II</td>
<td>4</td>
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<tr>
<td>MT 121 Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 111 College Algebra* (or higher)</td>
<td>5</td>
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<tr>
<td>Third Term</td>
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</tr>
<tr>
<td>CH 222 General Chemistry II*</td>
<td>5</td>
</tr>
<tr>
<td>MT 113 Electronic Circuits and Devices III</td>
<td>4</td>
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<tr>
<td>MT 122 Digital Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MT 131 Intro to Programmable Logic Controllers</td>
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<tr>
<td>MT 108 Statistics for Process Control</td>
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<tr>
<td>or MTH 243 Statistics I*</td>
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<tr>
<td>WR 227 Technical and Professional Writing I</td>
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<tr>
<td>Fourth Term</td>
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<tr>
<td>MT 180 High Tech Employment Strategies</td>
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<tr>
<td>MT 223 Vacuum Technology</td>
<td>3</td>
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<tr>
<td>MT 224 Process Equipment I</td>
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<tr>
<td>PHY 201 General Physics*</td>
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<tr>
<td>or PHY 211 General Physics (Calculus)*</td>
<td>5</td>
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<tr>
<td>SP 130 Business and Professional Speech Communication</td>
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<tr>
<td>General Education</td>
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<td>Fifth Term</td>
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<tr>
<td>MT 227 Process Equipment II</td>
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<tr>
<td>MT 240 RF Plasma Systems</td>
<td>3</td>
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<tr>
<td>PHY 202 General Physics*</td>
<td>4</td>
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<tr>
<td>or PHY 212 General Physics (Calculus)*</td>
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<tr>
<td>SP 215 Small Group Communication*</td>
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</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MT 101 Introduction to Semiconductor Mfg</td>
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<tr>
<td>MT 102 Introduction to Semiconductor Devices</td>
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<td>MT 103 Introduction to Micro and Nano Processing</td>
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<tr>
<td>MT 111 Electronic Circuits and Devices I</td>
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<tr>
<td>Second Term</td>
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</tr>
<tr>
<td>CH 221 General Chemistry I*</td>
<td>5</td>
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<tr>
<td>MT 112 Electronic Circuits and Devices II</td>
<td>4</td>
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<td>MT 121 Digital Systems I</td>
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<tr>
<td>MTH 111 College Algebra* (or higher)</td>
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<tr>
<td>CH 222 General Chemistry II*</td>
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<tr>
<td>MT 113 Electronic Circuits and Devices III</td>
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<td>MT 122 Digital Systems II</td>
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<td>MT 131 Intro to Programmable Logic Controllers</td>
<td>3</td>
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<tr>
<td>MT 108 Statistics for Process Control</td>
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<td>or MTH 243 Statistics I*</td>
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<td>WR 227 Technical and Professional Writing I</td>
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<td>MT 180 High Tech Employment Strategies</td>
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<td>MT 223 Vacuum Technology</td>
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<td>MT 224 Process Equipment I</td>
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<tr>
<td>PHY 201 General Physics*</td>
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<td>or PHY 211 General Physics (Calculus)*</td>
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<td>MT 240 RF Plasma Systems</td>
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<tr>
<td>PHY 202 General Physics*</td>
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<tr>
<td>or PHY 212 General Physics (Calculus)*</td>
<td>5</td>
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<tr>
<td>SP 215 Small Group Communication*</td>
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</tbody>
</table>
**SOLAR VOLTAIC MANUFACTURING TECHNOLOGY AAS DEGREE**

Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Solar Voltaic Manufacturing Technology Degree Credit Summary**

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Credit Total 91

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

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<td>CH 100</td>
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**Third Term**

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<td>MT 122</td>
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**Fourth Term**

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<td>MT 131</td>
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<td>MT 108</td>
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**Fifth Term**

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<td>MT 224</td>
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**Sixth Term**

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<td>MT 227</td>
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<td>PHY 202</td>
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<tr>
<td>or</td>
<td></td>
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<tr>
<td>PHY 212</td>
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<tr>
<td>SP 215</td>
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**Seventh Term**

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<td>MT 200</td>
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<td>MT 222</td>
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<td>MT 228</td>
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<td>PHY 203</td>
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<tr>
<td>or</td>
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<tr>
<td>PHY 213</td>
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</table>

**AUTOMATED MANUFACTURING TECHNOLOGY AAS DEGREE**

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

**Automated Manufacturing Technology Degree Credit Summary**

<table>
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<td>SP</td>
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<td>EET</td>
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<td>WR</td>
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<td>PHY</td>
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</tbody>
</table>

Credit Total 96

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
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<td>MT 102</td>
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<td>MT 104</td>
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**Second Term**

<table>
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<th>Credits</th>
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</thead>
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<td>CS 161</td>
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<tr>
<td>MT 112</td>
<td>4</td>
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<tr>
<td>MT 121</td>
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<tr>
<td>General Education</td>
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**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 162</td>
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<tr>
<td>MT 113</td>
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<tr>
<td>MT 122</td>
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**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
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<td>MT 131</td>
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<tr>
<td>MT 132</td>
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<tr>
<td>or</td>
<td></td>
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<tr>
<td>CS 161</td>
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**Fifth Term**

<table>
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<th>Course</th>
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<tbody>
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<td>MT 101</td>
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<td>MT 102</td>
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**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 240</td>
<td>3</td>
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<tr>
<td>MT 227</td>
<td>3</td>
</tr>
<tr>
<td>PHY 202</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>PHY 212</td>
<td>4</td>
</tr>
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<td>SP 215</td>
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**Seventh Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MT 200</td>
<td>3</td>
</tr>
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<td>MT 222</td>
<td>3</td>
</tr>
<tr>
<td>MT 228</td>
<td>4</td>
</tr>
<tr>
<td>PHY 203</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>PHY 213</td>
<td>4</td>
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</table>
Multimedia specialists are employed by companies that produce multimedia destined for the World Wide Web, CD-ROM, kiosks and computer-based delivery. Multimedia projects include those focused on business, marketing, education, training, presentations and entertainment applications.

The program is located at the Cascade Campus. The 100 level multimedia courses are generally offered each term and students may begin taking classes during any term. A variety of advanced, 200 level courses are also offered. Degree and certificate students must receive a C or better in all required multimedia courses.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Multimedia

One-Year Certificate
Multimedia

Less than One-Year Certificate
Video Production

PREREQUISITES AND REQUIREMENTS

Students entering the program must possess strong Macintosh or Windows computer management skills and be familiar with essential software such as word processing and draw/paint programs. Recommended prerequisites: ART 115, 116, 117 and CAS 111D.

MULTIMEDIA AAS DEGREE

Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Multimedia Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MM</td>
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<tr>
<td>ART</td>
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<td>BA</td>
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<td>Remaining General Education</td>
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<td>MTH</td>
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<td>CS</td>
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<td>SP</td>
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<td>WR</td>
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<tr>
<td><strong>Credit Total</strong></td>
<td>97</td>
</tr>
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</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>MM 110</td>
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<td>MM 120</td>
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<td>MM 130</td>
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<td>MM 140</td>
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Second Term

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MM 150</td>
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<td>MM 230</td>
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<td>MM 231</td>
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</tr>
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<td>MM 235</td>
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</table>

PORTLAND COMMUNITY COLLEGE  ■  2012-2013

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
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<td>MTH 243</td>
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Fifth Term

<table>
<thead>
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<tbody>
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<td>EET 241</td>
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<td>CIS 179</td>
<td>4</td>
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<tr>
<td>MT 180</td>
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<td>MT 224</td>
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<td>SP 215</td>
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Sixth Term

<table>
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<tr>
<td>MT 227</td>
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<td>PHY 201</td>
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Seventh Term

<table>
<thead>
<tr>
<th>Course</th>
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<td>MT 222</td>
<td>3</td>
</tr>
<tr>
<td>MT 228</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

SOLAR VOLTAIC MANUFACTURING TECHNOLOGY: CAREER PATHWAY CERTIFICATE

Minimum 14 credits Students must also meet certificate requirements. The Solar Voltaic Manufacturing certificate is a Career Pathway. All courses are contained in the Solar Voltaic Manufacturing Technology AAS Degree.

CH 100  Fundamentals for Chemistry 1  4
MT 109  Intro to Electronics and Instrumentation  3
or
MT 111  Electronic Circuits and Devices I  4
MT 101  Introduction to Semiconductor Mfg  1
MT 102  Introduction to Semiconductor Devices  1
MT 104  Introduction Solar Voltaic Processing  1
MT 121  Digital Systems I  3
MT 180  High Tech Employment Strategies  1

1 A higher chemistry class can be substituted

MULTIMEDIA

Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 218
971-722-5398 or 971-722-5672

CAREER AND PROGRAM DESCRIPTION

This program is designed to provide individuals with the entry level skills and experience needed for employment in a wide variety of professional opportunities such as a multimedia associate producer, web designer, web content creation specialist, interface designer, multimedia programmer/authoring specialist, multimedia graphic production artist, digital video specialist, interactive/technical writer, multimedia project manager and more.

The program also provides ongoing skill development to members of the interdisciplinary multimedia team entering from related professions, such as graphic design, film/video, publishing, art and more. A variety of advanced courses are available for those wishing to expand and move their skills into the digital world.

Multimedia specialists are employed by companies that produce multimedia destined for the World Wide Web, CD-ROM, kiosks and computer-based delivery. Multimedia projects include those...
PROGRAMS & DISCIPLINES

Third Term
MM 220 Multimedia Design II 3
MM 240 Multimedia Authoring II Scripting 4
ART 103 Introduction to Art* 4
BA 131 Computers in Business 4

Fourth Term
MM 241 Multimedia Authoring III-Scripting 4
MM 270 Writing for Multimedia 3
BA 205 Solving Communication Problems with Technology 4
SP 130 Business and Professional Speech Communication 4

Fifth Term
MM 238 Creating Professional DVDs-Video 4
MM 245 Internet Delivery Methods 3
ART 131 Introduction to Drawing* 3
ART 115 Basic Design* 3

Sixth Term
MM 160 Marketing Yourself as a Multimedia Professional 2
MM 232 Multimedia 3D Modeling and Animation 3
ART 116 Basic Design* 3
WR 122 English Composition 4
General Education 4

Seventh Term
ART 117 Basic Design* 3
MTH 105 Explorations in Mathematics* 4
General Education 4

Eighth Term
MM 250 Advanced Multimedia Project Development I 3
*Could be used as General Education

MULTIMEDIA ONE-YEAR CERTIFICATE
Minimum 60 credits. Students must meet comprehensive certificate requirements. The Multimedia Certificate is a related certificate. All courses are contained in the Multimedia AAS Degree.

Multimedia Certificate Credit Summary
MM 25
MM Program Electives 20
CAS 6
MM Support Electives 9
Credit Total 60

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
MM 110 Introduction to Multimedia 1
MM 120 Multimedia Design 2
MM 130 Multimedia Graphics, Video and Audio Production 3
MM 140 Multimedia Authoring I 3
CAS 111D Beginning Website Creation/Dreamweaver 3
CAS 175 Introduction to Flash 3

Second Term
MM 230 Graphics for Multimedia 4
MM 231 Vector Graphics and Animations for the World Wide Web 3
MM 235 Digital Video Editing and Production 3
MM Program Electives 4

Third Term
MM 150 Multimedia Project Review, Testing and Delivery 1
MM 270 Writing for Multimedia 3
MM Program Electives 8
MM Support Electives 3

Fourth Term
MM 160 Marketing Yourself as a Multimedia Professional 2
MM Program Electives 8
MM Support Electives 6

Multimedia Support Electives
ARCH 126 Introduction to AutoCAD 3
ARCH 127 Introduction to Google SketchUp 3
ARCH 136 Intermediate AutoCAD 3
ART 115 Basic Design 3
ART 116 Basic Design 3
ART 117 Basic Design 3
ART 131 Introduction to Drawing 3
ART 140 Digital Photography 3
ART 293 Figure Sculpture 3
BA 101 Introduction to Business 4
BA 205 Solving Communication Problems With Technology 4
BA 207 Introduction to E-Commerce 4
CAS 106 Introduction to XHTML 1
CAS 109 Beginning PowerPoint 1
CAS 110 Introduction to Web Graphics Using Fireworks 1
CAS 111D Beginning Website Creation: Dreamweaver 3
CAS 137 Basic Web Design Skills/Adobe 3
CAS 175 Introduction to Flash 3
CAS 181 Web Site Creation Using CMS - Content Management Systems 3
CAS 206 Principles of XHTML 4
CAS 208 Beginning Photoshop for the Web 3
CAS 211D Intermediate Dreamweaver 3
CAS 213 JavaScript and jQuery for Designers 4
CAS 215 Cascading Style Sheets (CSS) and Dynamic HTML 4
CAS 232 Desktop Publishing: InDesign 3
CIS 122 Software Design 4
CIS 133B Intro to Visual Basic.NET Programming 4
CIS 133J Java Programming I 4
CIS 233B Intermediate Visual Basic.Net Programming 4
CIS 233J Java Programming II 4
CIS 234B Advanced Visual Basic.Net Programming 4
CIS 234J Java Programming III 4
CIS 178 Applied Internet Concepts 4
CAS 133G Introduction to Computer Games 4
CS 140U Introduction to UNIX 4
CS 233G Game Programming 4
DRF 126 Introduction to AutoCAD 3
DRF 136 Intermediate AutoCAD 3
DRF 246 AutoCAD 3-D and Solid Modeling 3
DRF 256 Advanced AutoCAD 3
ED 103 Desktop Publishing for Educators 3
# PROGRAMS & DISCIPLINES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ED 104</td>
<td>Multimedia for Educators</td>
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</tr>
<tr>
<td>ED 171</td>
<td>Computers in Education II</td>
<td>3</td>
</tr>
<tr>
<td>ENG 195</td>
<td>Film Studies: Film as Art</td>
<td>4</td>
</tr>
<tr>
<td>ENG 196</td>
<td>Film Studies: Directors</td>
<td>4</td>
</tr>
<tr>
<td>ENG 197</td>
<td>Film Studies: Contemporary Themes and Genres</td>
<td>4</td>
</tr>
<tr>
<td>GD 114</td>
<td>Introduction Typography</td>
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<tr>
<td>GD 120</td>
<td>Graphic Design I</td>
<td>3</td>
</tr>
<tr>
<td>GD 122</td>
<td>Graphic Design II</td>
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<td>GD 124</td>
<td>Graphic Design III</td>
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<tr>
<td>GD 221</td>
<td>Graphic Design IV</td>
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<tr>
<td>GD 222</td>
<td>Graphic Design V</td>
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<tr>
<td>GD 228</td>
<td>Professional Graphic Design Practices</td>
<td>3</td>
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<tr>
<td>GD 229</td>
<td>Portfolio Preparation</td>
<td>3</td>
</tr>
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<td>GD 242</td>
<td>Combined Graphic Programs</td>
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<td>GD 249</td>
<td>Design Studio</td>
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<td>Electronic Media I</td>
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<tr>
<td>MUC 124</td>
<td>Electronic Media II</td>
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<tr>
<td>MUC 125</td>
<td>Electronic Media III</td>
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<tr>
<td>MUC 222</td>
<td>Introduction to Recording Technologies</td>
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<tr>
<td>MUC 223</td>
<td>Studio Recording Technology I</td>
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<tr>
<td>MUC 224</td>
<td>Studio Recording Technology II</td>
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<td>MUC 225</td>
<td>Studio Recording Technology III</td>
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<td>MUC 226</td>
<td>Digital Recording I</td>
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<td>WR 227</td>
<td>Technical and Professional Writing I</td>
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<td>WR 243</td>
<td>Creative Writing - Script Writing</td>
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<td>WR 247</td>
<td>Advanced Creative Writing - Script Writing</td>
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<tr>
<td>WR 9599</td>
<td>Professional Editing</td>
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<tr>
<td>WR 9600</td>
<td>Technical and Professional Writing II</td>
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<td>WR 9601</td>
<td>Graphics for Technical and Professional Writers</td>
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</tr>
<tr>
<td>MM 141</td>
<td>Incorporating Multimedia Elements in Presentation Software</td>
<td>2</td>
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<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
<td>3</td>
</tr>
<tr>
<td>MM 232</td>
<td>Multimedia 3D Modeling and Animation</td>
<td>3</td>
</tr>
<tr>
<td>MM 233</td>
<td>3D Character Modeling and Animation</td>
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<td>MM 234</td>
<td>3D for the World Wide Web</td>
<td>3</td>
</tr>
<tr>
<td>MM 236</td>
<td>Internet Delivery of Digital Video and Audio Files</td>
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<tr>
<td>MM 237</td>
<td>Video Compositing and Effects</td>
<td>4</td>
</tr>
<tr>
<td>MM 238</td>
<td>Creating Professional DVDs-Videos</td>
<td>4</td>
</tr>
<tr>
<td>MM 240</td>
<td>Multimedia Authoring II - Scripting</td>
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<tr>
<td>MM 241</td>
<td>Multimedia Authoring III - Scripting</td>
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</tr>
<tr>
<td>MM 244</td>
<td>Creating Interactive Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>MM 245</td>
<td>Internet Delivery Methods</td>
<td>3</td>
</tr>
<tr>
<td>MM 246</td>
<td>Post-Production Sound for Video</td>
<td>2</td>
</tr>
<tr>
<td>MM 250</td>
<td>Advanced Multimedia Project Development I</td>
<td>3</td>
</tr>
<tr>
<td>MM 251</td>
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<td>MM 252</td>
<td>Advanced Multimedia Project Development III</td>
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<td>MM 253</td>
<td>Intermediate Modeling and Texturing</td>
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<td>MM 254</td>
<td>Character Rigging and Animation</td>
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<td>MM 255</td>
<td>3D Lighting and Texturing</td>
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<td>MM 256</td>
<td>Graphics for Multimedia II</td>
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<tr>
<td>MM 260</td>
<td>Video Production I</td>
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<td>MM 262</td>
<td>Video Production III</td>
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<tr>
<td>MM 280</td>
<td>Cooperative Work Experience in Multimedia</td>
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## VIDEO PRODUCTION

**LESS THAN ONE-YEAR CERTIFICATE**

Minimum 44 credits. Students must meet comprehensive certifi-
icate requirements.

### Video Production Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>Incorporating Multimedia Elements in Presentation Software</td>
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<td>MM 150</td>
<td>Project Review, Testing, and Delivery</td>
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<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
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<td>MM 220</td>
<td>Multimedia Design II</td>
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<td>MM 231</td>
<td>Vector Graphics and Animation for the World Wide Web</td>
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<td>Multimedia 3D Modeling and Animation</td>
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<td>Internet Delivery Methods</td>
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</tr>
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<td>MM 246</td>
<td>Post-Production Sound for Video</td>
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</tr>
<tr>
<td>MM 250</td>
<td>Advanced Multimedia Project Development I</td>
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### Multimedia Program Electives

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<th>Course Title</th>
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<tr>
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<td>MM 240</td>
<td>Multimedia Authoring II - Scripting</td>
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<td>MM 241</td>
<td>Multimedia Authoring III - Scripting</td>
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<td>MM 244</td>
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<td>MM 246</td>
<td>Post-Production Sound for Video</td>
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<tr>
<td>MM 250</td>
<td>Advanced Multimedia Project Development I</td>
<td>3</td>
</tr>
<tr>
<td>MM 251</td>
<td>Advanced Multimedia Project Development II</td>
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<td>MM 252</td>
<td>Advanced Multimedia Project Development III</td>
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<td>MM 253</td>
<td>Intermediate Modeling and Texturing</td>
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<tr>
<td>MM 254</td>
<td>Character Rigging and Animation</td>
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<tr>
<td>MM 255</td>
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<tr>
<td>MM 256</td>
<td>Graphics for Multimedia II</td>
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<tr>
<td>MM 260</td>
<td>Video Production I</td>
<td>4</td>
</tr>
<tr>
<td>MM 261</td>
<td>Video Production II</td>
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</table>

**Credit Total 44**
MUSIC

Rock Creek
Building 3, Room 201
971-722-7235

Sylvania Campus
Communications Technology Building, (CT) Room 216
971-722-4264 or 971-722-4759

www.pcc.edu/programs/music

DESCRIPTION

Music is a universal art form practiced and appreciated by every culture of the world. From live music performance as a soloist, ensemble member or accompanist, to working as a studio musician, from composing or arranging music, to teaching music, musicians fulfill a critical, dynamic and often collaborative role within the arts. Formal music education includes the study of music theory, music history and literature, performance practice, music technology, and music pedagogy. The PCC music program offers courses that cater to both musicians and non-musicians alike. We offer a variety of introductory courses while also preparing those who wish to transfer to a four-year music program. With proper music study and training, students may become professional performers, conductors, composers, music theorists, music historians, or music educators.

MUSIC (PROFESSIONAL)

SEE PROFESSIONAL MUSIC

NURSING

Sylvania Campus
Health Technology Building (HT), Room 120
971-722-4466

Health Admissions
Health Technology Building (HT), Room 205
971-722-4759

www.pcc.edu/nursing

CAREER AND PROGRAM DESCRIPTION

Portland Community College is a member of the Oregon Consortium for Nursing Education (OCNE). This statewide consortium is composed of eight Community College Nursing Programs and Oregon Health Sciences University (OHSU) School of Nursing who have jointly developed the competency-based curriculum offered by all OCNE schools. The core competencies address the need for nurses skilled in clinical judgment and critical thinking; evidence-based practice; relationship-centered care; interdisciplinary collaboration; assisting individuals and families in self-care practices for promotion of health and management of chronic and acute illness; end-of-life care; and teaching, delegation, leadership and supervision of caregivers. Acceptance to the program allows for non-competitive admission to OHSU School of Nursing. The OCNE curriculum is designed as a four-year course of study. The first year is devoted to pre-admissions requisites and/or pre-program courses (45 credits) required before starting the nursing program. The second and third year of study is comprised of six terms, allowing students to complete the Associate of Applied Science degree (AAS) and be eligible to take the NLCEX-RN licensing exam. Licensure is granted through the Oregon State Board of Nursing. After licensure, students can continue on in OHSU RN-BS nursing major program.

Applications are accepted once per year in the winter for fall entry. PCC's nursing program is competitive and applications are evaluated on a point system. Minimum eligibility requirements must be met in order to apply. Contact the Health Admission Office for information and admission instructions.

LEGAL LIMITATIONS FOR RN LICENSURE

Applicants should be aware that the following questions are asked on the registered nurse licensure exam application by the Oregon State Board of Nursing:

1. Do you have a physical, mental or emotional condition which in any way impairs your ability to practice nursing with reasonable skill and safety?

2. Have you ever been arrested, charged with, entered a plea of guilty, nolo contendere, convicted of or been sentenced for any criminal offense, including driving under the influence, in any state?

Individuals who may have a past history of chemical abuse, felonies, or believe that past history circumstances may interfere with their ability to sit for the licensure examination should contact the OSBN at 971-673-0685 for recommendations prior to applying to the PCC Nursing Program. Applicants may also confer with the program director regarding concerns with any of these questions.

PCC NURSING PROGRAM ACCREDITATION

Oregon State Board of Nursing
17938 SW Upper Boones Ferry Rd
Portland OR 97224
971-673-0685

National League for Nursing Accrediting Commission (NLNAC)
3343 Peachtree Rd Suite 850
Atlanta, Georgia 30326
Phone (404) 975-5000

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Nursing

PREREQUISITES AND REQUIREMENTS

Prior to admission to the nursing program all prerequisite courses must be completed with a grade C or higher. Pass/No Pass courses are not accepted. Note: Prerequisite courses and credits cannot apply toward the Nursing Degree Course of Study.

Prerequisites courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 231</td>
<td>Human Anatomy and Physiology I*1</td>
<td>4</td>
</tr>
<tr>
<td>BI 232</td>
<td>Human Anatomy and Physiology II*1</td>
<td>4</td>
</tr>
<tr>
<td>BI 233</td>
<td>Human Anatomy and Physiology III*1</td>
<td>4</td>
</tr>
<tr>
<td>FN 225</td>
<td>Nutrition 1</td>
<td>4</td>
</tr>
<tr>
<td>MTH 95</td>
<td>Intermediate Algebra or higher 1</td>
<td>4</td>
</tr>
<tr>
<td>PSY 215</td>
<td>Human Development 1</td>
<td>4</td>
</tr>
</tbody>
</table>
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- NRS 110 Foundations of Nursing Health Promotion 9
- BI 234 Microbiology 5

Second Term
- NRS 111 Foundations of Nursing in Chronic Illness I 6
- NRS 230 Clinical Pharmacology I 3
- NRS 232 Pathophysiological Process I 3
- General Education 5

Third Term
- NRS 112 Foundations of Nursing in Acute Care I 6
- NRS 231 Clinical Pharmacology II 3
- NRS 233 Pathophysiological Processes II 3
- Nursing Program Electives 5

Fourth Term
- NRS 221 Nursing in Chronic Illness II and End of Life 9
- General Education 5

Fifth Term
- NRS 222 Nursing in Acute Care II and End of Life 9
- Nursing Program Electives 5

Sixth Term
- NRS 224 Integrative Practicum I 9
- Nursing Program Electives 5

*Could be used as General Education

STUDENT DISABILITY INFORMATION

Nursing is a physically and mentally challenging occupation. Education related to this program field is designed to prepare nurses for these challenges. Nursing students must be able to meet all established academic and clinical requirements to successfully complete the program. Persons with questions concerning qualifications are encouraged to contact the Admissions Office for individual consultation prior to formal application.

Applicants with disabilities are encouraged to contact Disability Services (DS) 971-722-4341. To be eligible for a reasonable accommodation, applicants must provide clear documentation of their disability. DS is responsible for determining if reasonable accommodations can be made available when students begin the program. DS services are confidential and are separate from the nursing and college application processes. Early contact with DS will ensure that accommodations can be made available when students begin the program.

Applicants with disabilities are encouraged to contact Disability Services (DS) 971-722-4341. To be eligible for a reasonable accommodation, applicants must provide clear documentation of their disability. DS is responsible for determining if reasonable accommodations can be made available when students begin the program. DS services are confidential and are separate from the nursing and college application processes. Early contact with DS will ensure that accommodations can be made available when students begin the program.

Students are strongly encouraged to complete as many transferable general education courses and electives as possible prior to entering the program. These courses must be completed with a C or better by the end of the term in which they are designated.

NURSING AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Nursing Degree Credit Summary
- NRS 60
- Nursing Program Electives 14
- General Education 11
- BI 5

Credit Total 90

OCUPATIONAL SKILLS TRAINING

Southeast Center
Mt Tabor Hall (MTH), Room 106
971-722-6127

www.pcc.edu/ost

CAREER AND PROGRAM DESCRIPTION

The Occupational Skills Training program is designed to provide the opportunity for students to receive instruction in a specific occupational area. The programs are individualized and allow flexibility in program design, delivery, and implementation. Individual-
izel plans are developed in consultation with the student, PCC faculty, PCC OST coordinators, work-site supervisors, and agency representative(s), if appropriate.

**DEGREES AND CERTIFICATES OFFERED**

**Two-Year Certificate**

Occupational Skills Training

**PREREQUISITES AND REQUIREMENTS**

An interview with an OST coordinator is required for assessment, to determine the specific occupation and to identify a suitable training site and its availability. Prerequisites are determined by specific occupational standards.

**COURSE OF STUDY**

PCC faculty and academic professionals approve community employers based on their experience and training in the specific occupational area. PCC faculty and academic professionals provide on-site monitoring of student progress toward learning outcomes through monthly on-site supervisor reports, weekly/monthly student reports, quarterly learning outcomes and curriculum reviews, and quarterly student evaluations. This is an open entry/open exit program so that students complete a full college quarter, but may begin their program at any time during the school term.

**OCCUPATIONAL SKILLS TRAINING**

**TWO-YEAR CERTIFICATE**

Minimum 64 credits are required for a Certificate of Completion. A maximum of 64 pass/no pass credits are allowed in the Occupational Skills Training Certificate. Students who have OST 101 and no other PCC credit courses will not have a GPA as all OST courses are offered as Pass/No Pass only. A maximum of 24 credits of Occupational Skills credit may be applied to an Associate of General Studies Degree.

**OPHTHALMIC MEDICAL TECHNOLOGY**

Cascade Campus
Student Services Building (SSB), Room 313
971-722-5667

[www.pcc.edu/omt](http://www.pcc.edu/omt)

**CAREER AND PROGRAM DESCRIPTION**

Those training in the Ophthalmic Medical Technology Program develop skills to perform ophthalmic procedures under the supervision of a licensed physician. These procedures include: medical histories, diagnostic tests, refractometry, anatomical and functional ocular measurements and tests, administration of topical ophthalmic and oral medications, instructing patients, maintaining equipment, sterilizing surgical instruments, assisting in minor ophthalmic surgery and assisting in the fitting of contact lenses. Ophthalmic medical technology is a rapidly expanding field and a growing demand exists for technicians.

The Ophthalmic Program is a limited entry program with restricted enrollment. The program is limited to 24 students. Only those students who have been officially admitted to the Ophthalmic Medical Technology Program may enroll in OMT courses. Professionals in the field may be admitted when space is available.

The program begins fall term only. To advance to the next term students must successfully complete all of the previous term’s coursework by receiving a grade of Pass or C or better.

This program is designed to correlate classroom and laboratory experiences with clinical experience in ophthalmic offices and clinics and prepares students to function under the supervision of a licensed physician.

This program is accredited by the Commission on Accreditation for Ophthalmic Medical Programs (CoA-OMP). Students in the OMT program will test for national certification as an ophthalmic technician during term seven of the program.

**DEGREES AND CERTIFICATES OFFERED**

**Associate of Applied Science Degree**

**Ophthalmic Medical Technology**

**PREREQUISITES AND REQUIREMENTS**

1. High school completion or GED.
2. Successful Completion of WR 121, MTH 65, BI 121 and MP 111.
3. Two statements of recommendation from a recent employer, instructor or advisor.
4. Students must have working knowledge or background of basic computer skills including Windows, Internet and e-mail.
5. Program advising session with an Ophthalmic Medical Technology Program advisor.
6. Students must have transportation to practicum facilities throughout the Portland metropolitan area.
7. A criminal background check. Please contact the department for more information.
8. Students may consult with faculty advisor about alternative approaches to completing portions of the Ophthalmic Medical Technology curricula.

Accepted students must have documentation of the following prior to the beginning of spring term: satisfactory physical examination, Mantoux test, evidence of immunity to measles, evidence of initiating the immunization series for Hepatitis B or sign a waiver declining immunization.

**OPHTHALMIC MEDICAL TECHNOLOGY AAS DEGREE**

Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.
Ophthalmic Medical Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>OMT 115</td>
<td>4</td>
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<tr>
<td>OMT 145</td>
<td>2</td>
</tr>
<tr>
<td>OMT 163</td>
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<tr>
<td>PSY 101</td>
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<tr>
<td>Remaining General Education</td>
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<tr>
<td>BI</td>
<td>4</td>
</tr>
<tr>
<td>MA</td>
<td>5</td>
</tr>
<tr>
<td>MP</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>91</strong></td>
</tr>
</tbody>
</table>

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

- BI 122 Intro to Human Anatomy and Physiology II* 4
- OMT 115 Intro to Ophthalmics 2
- OMT 145 Clinical Optics I 2
- OMT 163 Ocular Anatomy and Physiology 2
- PSY 101 Psychology and Human Relations* 4

Second Term

- HE 113 First Aid and Professional CPR 1
- MP 150 Intro to Electronic Health Records 3
- OMT 102 Pharmacology/Eye Disease I 2
- OMT 104 Ophthalmic Office Procedures 3
- OMT 146 Clinical Optics II 2

Third Term

- MA 131 Introduction to Medical Science 5
- OMT 103 Pharmacology/Eye Disease II 2
- OMT 106 Introduction to Clinical Skills 3
- OMT 121 Practicum I 1
- OMT 147 Clinical Optics III 2
- OMT 231 Seminar I 1

Fourth Term

- OMT 122 Practicum II 2

Fifth Term

- OMT 206 Diagnostic Procedures I 4
- OMT 209 Surgical Assisting Procedures 4
- OMT 222 Practicum II 4
- OMT 232 Seminar II 2

Sixth Term

- OMT 207 Diagnostic Procedures II 4
- OMT 208 Ocular Motility 2
- OMT 222 Practicum II 4
- OMT 232 Seminar II 2
- OMT 250 Ophthalmic Imaging 3

Seventh Term

- MP 140 Health Law and Professional Standards 3
- OMT 210 Advanced Diagnostics 4
- OMT 232 Seminar II 2
- OMT 222 Practicum II 4
- General Education 8

*Could be used as General Education

PARALEGAL

Cascade Campus
Terrell Hall (TH), Room 109
971-722-5212 or 971-722-5770
www.pcc.edu/paralegal

CAREER AND PROGRAM DESCRIPTION

A paralegal is a trained paraprofessional who assists the attorney in delivery of legal services to the client. Paralegals work under the supervision of an attorney at law firms, corporations, state and federal agencies, non-profits and other sectors. Tasks include: client and witness interviews, document preparation, organization of case materials and data, investigation, research and file management. A paralegal performs these tasks under the supervision of an attorney. The program also provides students with skills which enable them to pursue jobs in alternative careers.

The PCC Paralegal Program is designed to provide students with a high quality background in paralegal studies, including providing development of analytic skills; familiarity with substantive and procedural law; development of various practical skills; familiarity with legal terminology; and research and writing skills. The program has classes that focus on specific skills, such as client counseling, investigation and research, as well as various substantive law classes. Legal research classes are taught in the program’s legal research center located at Terrell Hall (TH) room 109 on the Cascade Campus.

The Paralegal program at Portland Community College is approved by the American Bar Association (ABA) effective February 8, 2010. It is the first Paralegal program in the State of Oregon to achieve ABA approved status. ABA approval provides students and the legal community assurance that PCC’s program is providing a high quality educational experience grounded in practical paralegal preparation, training and education to its students.

Classes meet primarily on weekday evenings from 6:30 pm to 9:20 pm. Some daytime and Saturday classes are scheduled. Most classes are located at the Cascade Campus or CLIMB Center. Students who complete the AAS in Paralegal degree may be able to transfer into the Bachelor of Applied Science in Management program at Oregon Institute of Technology. Paralegal courses may transfer to Portland State University. Students interested in transferring to any four-year university should check with that institution regarding transferability status of specific paralegal courses.

PREREQUISITES AND REQUIREMENTS

1. High school completion or GED.
2. Completion of reading, writing and math placement tests unless waived based upon equivalent course work or college degree

College level course work from an accredited college may be substituted for required degree and/or certificate course work.

Program advising is required. Students planning to enroll in the program should contact the department for specific eligibility requirements and advising. The Paralegal AAS degree is an open enrollment program. The Paralegal Certificate is a limited entry program requiring department chair approval. Completing certifi-
cate admission requirements does not guarantee admission into the program.

A grade of C or better for all PL core courses is required. An overall GPA of at least 2.0 for all PL courses is required to graduate.

Visit the department web page for details on admission, prerequisites and requirements: www.pcc.edu/programs/paralegal/.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Paralegal

One-Year Certificate
Paralegal

PARALEGAL AAS DEGREE
Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Paralegal Degree Credit Summary

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PL Core Classes</td>
<td>24</td>
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<tr>
<td>Paralegal Program Electives</td>
<td>21</td>
</tr>
<tr>
<td>Paralegal Support Electives</td>
<td>18</td>
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<tr>
<td>Restricted General Education</td>
<td>27</td>
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<td><strong>Credit Total</strong></td>
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Paralegal Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL 101</td>
<td>Introduction to Law-Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>PL 102</td>
<td>Introduction to Law-Substantive Areas</td>
<td>3</td>
</tr>
<tr>
<td>PL 103</td>
<td>Introduction to Law-Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PL 107</td>
<td>Techniques of Interview</td>
<td>3</td>
</tr>
<tr>
<td>PL 130</td>
<td>Legal Software</td>
<td>3</td>
</tr>
<tr>
<td>PL 201</td>
<td>Legal Research and Library Use</td>
<td>3</td>
</tr>
<tr>
<td>PL 202</td>
<td>Computer Research in Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 204</td>
<td>Applied Legal Research and Drafting</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Paralegal Program Electives 1</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Paralegal Support Electives 2</td>
<td>18</td>
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<tr>
<td></td>
<td>Restricted General Education 3</td>
<td>27</td>
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</table>

1 Courses from other departments, such as BA or CJA may be used as Paralegal electives for up to six credits. Students should consult the department for course approval.

2 Any 100 to 299 level course

3 Twenty-seven credits must be from a restricted General Education list with at least one class taken in each area (Social Science, Arts and Letters, and Science, Math and Computer Science) as per ABA requirements. Students should consult Department Chair. General Education courses that are not approved to be used in the Restricted General Education area are: ART 115, 116, 117, 119, 131, 140, 141, 142, 143, 181, 197, 198, 220, 231, 237, 240, 243, 248, 253, 256, 270, 271, 277, 279, 281, 284, 287, 291, 292, 293, 294, all ESOL courses, all TA courses, all FN courses, all CS courses, and all CIS courses.

PARALEGAL ONE-YEAR CERTIFICATE
Minimum 45 credits. Students must also meet certificate requirements. The Paralegal Certificate is a related certificate. All courses are contained in the Paralegal AAS Degree.

Paralegal Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PL Core Classes</td>
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<td>Paralegal Program Electives</td>
<td>21</td>
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<tr>
<td><strong>Credit Total</strong></td>
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</table>

Courses from other departments, such as BA or CJA, may be used as Paralegal electives for up to six credits. Students should consult the department for course approval.

PARENT EDUCATION

Sylvania Campus
Health Technology Building (HT), Room 318
971-722-4217 or 971-722-4218
www.pcc.edu/academics/index.cfm/76.html

DESCRIPTION

Classes are taught by PCC parent education instructors with expertise in working both with children and adults. Some classes are lecture and discussion and others are interactive with parents and children together. Each class is tailored to the ages of the children and includes study topics. The study topics for the term are chosen jointly by the participants and the instructor in each class. Topics include: development, guidance, communication, self-esteem, health, current issues and others.

Courses are designed to help participants develop skills for successful parenting, learn more about their roles as parents and enhance their relationship with their children. Parent Education courses include: HEC 9402, HEC 157, HEC 9420, HEC 9421 and HEC 9422. See the Course Description (HEC prefix) section of this catalog for individual Parent Education courses and their prerequisites.
PEACE AND CONFLICT STUDIES

SEE THE FOCUS AWARDS SECTION OF THE CATALOG

PHILOSOPHY

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7235

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4324

DESCRIPTION
Philosophers ask and attempt to answer fundamental questions about ourselves and the world. What is real? What can be known? How should we live our lives? What is the nature of human nature? What distinguishes logic from illogic? Philosophy courses will look at the answers given to such questions by major historical figures and will help the student to learn how to think critically about issues of the sort raised by these questions. Philosophy courses need not be taken in sequence. All philosophy courses are transferable to Portland State University, Oregon State University and the University of Oregon.

See the Course Description (PHL prefix) section of this catalog for individual Philosophy courses and course prerequisites.

PHYSICAL EDUCATION

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5500

Rock Creek Campus
Building 3, Room 200
971-722-7539

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6147

Sylvania Campus
Health Technology Building (HT), Room 215
971-722-4210

www.pcc.edu/programs/pe/

DESCRIPTION
Physical education offers students the opportunity to improve physical fitness and conditioning through a variety of physical education classes. Students of all ages and fitness levels can take these classes to improve overall fitness, health, and wellness and ultimately increase their quality of life. Students will come away from physical education classes with knowledge about the value and benefits of physical fitness and the skills to design a personal fitness program to achieve lifelong wellness.

PCC does not provide medical coverage. It is strongly recommended that students have medical coverage and a recent physical exam before they participate in physical education courses. Students who require classroom accommodations should notify the physical education instructor and the Disability Services (DS). DS works with students to identify and ensure reasonable accommodations in PCC classes and programs. The Oregon State System of Higher Education and the systems in other states vary in their physical education requirements. Many physical education classes fulfill degree requirements at PCC or other institutions and colleges, or may transfer as elective credit. Students should check with their PCC program advisor or with the institution to which they plan to transfer. For information on the Fitness Technology Certificates and AAS degree, see Fitness Technology in the catalog. See the Course Description (PE prefix)

PHYSICS

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209

Rock Creek Campus
Building 7, Room 202
971-722-7500

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6147

Sylvania Campus
Science Technology Building (ST), Room 312
971-722-4174

DESCRIPTION
Physics is the root discipline of science that describes the natural universe at its most fundamental level. Physics is relevant to a broad range of academic pursuits including chemistry, biology, engineering, medicine and liberal arts. Physics allows students to view the world with a new understanding and appreciation of its order and beauty.

Physics is offered at three different levels: conceptual physics (PHY 101, PHY 102, PHY 103) algebra based (PHY 201, PHY 202, PHY 203) and calculus based (PHY 211, PHY 212, PHY 213). An introductory astronomy series is also offered (PHY 121, PHY 122, PHY 123). See the Course Description (PHY prefix) section of this catalog for individual Physics courses and course prerequisites.
POLITICAL SCIENCE

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7327

Sylvania Campus
SS 215
971-722-4289

DESCRIPTION
Political science focuses upon politics and political systems and the behavior of people within political systems. At PCC, primary emphasis is on American government, the constitutional background of American politics, political parties, interest groups, elections, Congress, the Presidency, the Supreme Court and domestic and foreign policies. In addition, PCC offers courses in international relations, American foreign policy and political ideology. See the Course Description (PS prefix) section of this catalog for individual Political Science courses and course prerequisites.

PROFESSIONAL MUSIC

Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 210
971-722-5226 or 971-722-5430

www.pcc.edu/promusic

CAREER AND PROGRAM DESCRIPTION
Music careers are made successful by one’s ability to choose a focus area: One may become a performance/studio musician, composer/arranger, recording engineer/producer, sound editor, foley artist, private music instructor/coach, record promotor/distributor, music journalist, or work in music marketing and promotions. Whichever is the case, a professional musician’s resume is built from a balance between practice, theory, and solid technological skills.

PCC’s program is intended for the occupationally-oriented music student whose career goals can best be reached by improving skills in music performance, music writing, music technology or a combination thereof. PCC offers a less than one-year certificate in music performance, production, and music writing. Students may earn this certificate by completing a minimum of 43 credits, including 37 credits of required, professional music courses and six credits of elective professional music courses. A graduate may pursue a career as a private teacher of music, instrumental musician, composer, arranger, orchestrator, music engineer, or producer. To learn whether courses will transfer to a four-year university, students must check with the institutions to which they intend to transfer. See the Course Description (MUC prefix) section of this catalog for individual professional music courses and their prerequisites.

The following professional music courses will be required of all program students. All sequential courses must be taken and passed in sequence.

DEGREES AND CERTIFICATES OFFERED
Less Than One-Year Certificate
Professional Music

PROFESSIONAL MUSIC
LESS THAN ONE-YEAR CERTIFICATE
Minimum 43 credits. Students must meet certificate requirements.

Professional Music Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUC</td>
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<td>9</td>
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<td>MUS</td>
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<td>MUC/MUS Electives</td>
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<td><strong>Credit Total 43</strong></td>
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COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

Summer Term
Professional Music Certificate Electives 6

First Term
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MUC 101</td>
<td>Commercial Music Theory I</td>
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<tr>
<td>MUC 120A</td>
<td>Sight Singing and Ear Training I</td>
<td>1</td>
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<tr>
<td>MUC 130A</td>
<td>Rhythm Training I</td>
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<tr>
<td>MUC 140A</td>
<td>Group Piano I</td>
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<tr>
<td>MUC 145A</td>
<td>Group Guitar/Bass I</td>
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<td>MUC 150A</td>
<td>Keyboard Harmony I</td>
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<tr>
<td>MUC 165</td>
<td>Business for the Musician</td>
<td>1</td>
</tr>
<tr>
<td>MUS 205</td>
<td>Introduction to Jazz History</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Term
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUC 102</td>
<td>Commercial Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUC 120B</td>
<td>Sight Singing and Ear Training II</td>
<td>1</td>
</tr>
<tr>
<td>MUC 130B</td>
<td>Rhythm Training II</td>
<td>1</td>
</tr>
<tr>
<td>MUC 150B</td>
<td>Keyboard Harmony II</td>
<td>1</td>
</tr>
<tr>
<td>MUC 234</td>
<td>Income Tax Preparation for Musicians</td>
<td>1</td>
</tr>
<tr>
<td>MUC 280A</td>
<td>CE: Vocational Music</td>
<td>1</td>
</tr>
<tr>
<td>MUS 206</td>
<td>Introduction to the History of Rock Music</td>
<td>3</td>
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</table>

Third Term
<table>
<thead>
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<th>Course Name</th>
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<tbody>
<tr>
<td>MUC 103</td>
<td>Commercial Music Theory III</td>
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<tr>
<td>MUC 120C</td>
<td>Sight Singing and Ear Training III</td>
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</tr>
<tr>
<td>MUC 130C</td>
<td>Rhythm Training III</td>
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</tr>
<tr>
<td>MUC 143</td>
<td>Group Percussion</td>
<td>2</td>
</tr>
<tr>
<td>MUC 150C</td>
<td>Keyboard Harmony III</td>
<td>1</td>
</tr>
<tr>
<td>MUC 164</td>
<td>Survey of the Music Industry</td>
<td>1</td>
</tr>
<tr>
<td>MUS 207</td>
<td>Introduction to the History of Folk Music</td>
<td>3</td>
</tr>
</tbody>
</table>

Professional Music Certificate Electives
Students may select from among the following courses to make up the number of credits required for the certificate. It is possible to concentrate on music writing or performance.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUC 123</td>
<td>Electronic Media I</td>
<td>2</td>
</tr>
<tr>
<td>MUC 124</td>
<td>Electronic Media II</td>
<td>2</td>
</tr>
<tr>
<td>MUC 125</td>
<td>Electronic Media III</td>
<td>2</td>
</tr>
<tr>
<td>MUC 140B</td>
<td>Group Piano II</td>
<td>2</td>
</tr>
<tr>
<td>MUC 144</td>
<td>Contemporary Singing</td>
<td>2</td>
</tr>
<tr>
<td>MUC 145B</td>
<td>Group Guitar/Bass II</td>
<td>2</td>
</tr>
<tr>
<td>MUC 145C</td>
<td>Group Guitar/Bass III</td>
<td>2</td>
</tr>
<tr>
<td>MUC 154A</td>
<td>Band Performance Workshop I</td>
<td>2</td>
</tr>
<tr>
<td>MUC 154B</td>
<td>Band Performance Workshop II</td>
<td>2</td>
</tr>
<tr>
<td>MUC 154C</td>
<td>Band Performance Workshop III</td>
<td>2</td>
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### Programs & Disciplines

**PORTLAND COMMUNITY COLLEGE**

**2012-2013 PROGRAMS & DISCIPLINES**

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
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<tr>
<td>MUC 155</td>
<td>Introduction to Improvisation</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155A</td>
<td>Improvisation I</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155B</td>
<td>Improvisation II</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155C</td>
<td>Improvisation III</td>
<td>2</td>
</tr>
<tr>
<td>MUC 166</td>
<td>Songwriting and Music Publishing</td>
<td>2</td>
</tr>
<tr>
<td>MUC 167</td>
<td>The Music Business</td>
<td>2</td>
</tr>
<tr>
<td>MUC 222</td>
<td>Introduction to Recording Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MUC 223</td>
<td>Studio Recording Technology I</td>
<td>3</td>
</tr>
<tr>
<td>MUC 224</td>
<td>Studio Recording Technology II</td>
<td>3</td>
</tr>
<tr>
<td>MUC 225</td>
<td>Studio Recording Technology III</td>
<td>3</td>
</tr>
<tr>
<td>MUC 226</td>
<td>Digital Recording I</td>
<td>3</td>
</tr>
<tr>
<td>MUC 227</td>
<td>Digital Recording II</td>
<td>3</td>
</tr>
<tr>
<td>MUC 228</td>
<td>Digital Recording III</td>
<td>3</td>
</tr>
<tr>
<td>MUS 108</td>
<td>Music Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>MUS 110</td>
<td>Fundamentals of Music</td>
<td>4</td>
</tr>
</tbody>
</table>

### Psychology

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7327

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4289

**Description**

Psychology is the scientific study of behavior and mental processes. Psychologists investigate how the individual’s immediate environment, as well as how the individual’s past experience, physiological makeup, and sociocultural context influence current thoughts, emotions and behavior. Psychology students pursue careers in a wide variety of settings in the public sector and private industry after a transfer to four year colleges and universities. Psychology students are also completing certificates and two year degrees.

At PCC, psychology courses introduce students to the field of psychology and prepare them for further study at four year colleges and universities. Psychology courses are also an integral component of many career technical programs. In addition, students take psychology courses for personal enrichment and as preparation for further post graduate study. See the Course Description (PSY prefix) section of this catalog for individual Psychology courses and course prerequisites.

### Real Estate

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4393 or 971-722-4287

[www.pcc.edu/re](http://www.pcc.edu/re)

**Career and Program Description**

PCC’s Real Estate Program offers classes to prepare brokers and property managers. Real estate brokers represent buyers and/or sellers in real estate sale/lease transactions. PCC offers courses that give students an introduction to the field of real estate as well as basic and advanced real estate investment. Brokers must satisfy the Oregon Real Estate Agency requirements for a broker’s license. PCC offers pre-license courses approved by the Oregon Real Estate Agency for the real estate broker license.

Property managers are responsible for overseeing the management of such properties as single family residences, duplexes, apartments, condominiums, office or retail buildings, and other types of income producing real estate. PCC offers pre-license courses approved by the Oregon Real Estate Agency for the real estate property manager license. Property managers must satisfy the Oregon Real Estate Agency requirements for a property manager’s license.

### Degrees and Certificates Offered

**Less Than One-Year Certificate**

Property Manager
Real Estate Broker

**Property Manager Less Than One-Year Certificate**

Minimum 12 credits. Students must meet certificate requirements.

Property Manager Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE 100</td>
<td>Introduction to Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>RE 250</td>
<td>Real Estate Investments I</td>
<td>3</td>
</tr>
<tr>
<td>RE 252</td>
<td>Real Estate Property Management</td>
<td>6</td>
</tr>
</tbody>
</table>

**Real Estate Broker Less Than One-Year Certificate**

Minimum 16 credits. Students must meet certificate requirements.

Property Manager Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE 110</td>
<td>Real Estate Practices</td>
<td>3</td>
</tr>
<tr>
<td>RE 112</td>
<td>Real Estate Law</td>
<td>3</td>
</tr>
<tr>
<td>RE 114</td>
<td>Real Estate Agency Law</td>
<td>2</td>
</tr>
<tr>
<td>RE 116</td>
<td>Real Estate Finance</td>
<td>3</td>
</tr>
<tr>
<td>RE 118</td>
<td>Real Estate Brokerage</td>
<td>2</td>
</tr>
<tr>
<td>RE 126</td>
<td>Real Estate Contracts</td>
<td>2</td>
</tr>
<tr>
<td>RE 140</td>
<td>Real Estate Broker Property Management</td>
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</tr>
</tbody>
</table>

Note: Requirements for licensing/certification as a broker or property manager may change over time. Students are advised to confirm the current license/certification requirements with the Oregon Real Estate Agency or PCC before making any course commitments.
REFRIGERATION, HVAC AND TRADE RELATED

Cascade Campus
Technology Education Building (TEB), Room 101
971-722-5650, 971-722-5651

SEE FACILITIES MAINTENANCE TECHNOLOGY

RELIGIOUS STUDIES

Cascade Campus
Terrell Hall (TH) Room 220
971-722-5251

CAREER AND PROGRAM DESCRIPTION

Religious Studies, as an interdisciplinary field, investigates the variety of human religious experience. A broad understanding of religion is sought through critical reflection on the various founders, history, myths and doctrines, rituals and traditions, and social and personal ethics. Techniques from the arts, humanities, social, and even hard sciences are employed. Religious Studies prepares students to go on to work or study further in disciplines such as religion and ministry, social service, archeology, education, law, linguistics, or political science.

PCC currently offers one Religious Studies course, R 210 World Religions. This course fulfills both General Education and cultural literacy requirements. This course transfers to PSU as one of the required courses for the Religious Studies minor. AAOT students interested in earning a bachelor's degree in Religious Studies should take related courses in areas such as anthropology, history, literature, and philosophy. Students must check for the specific requirements of the bachelor's program to which they intend to transfer. The interdisciplinary nature of the field allows students to customize their educational goals while providing a solid foundation for future learning. See the Course Description (R prefix) section of this catalog for individual Religious Studies courses and their prerequisites.

RUSSIAN

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4841

www.pcc.edu/programs/russian

DESCRIPTION

All PCC Russian courses are taught using an immersion method. The objective of all Russian courses is to help students to develop communicative competence and proficiency in comprehension, speaking, reading and writing Russian as well as cultural awareness. Assessment is based on consistent attendance, active student participation, and written and oral assignments.

There are no requirements or prerequisites for entry into the first term of first year Russian. However, the student should read the Russian course descriptions for other Russian courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will not be admitted to a course if their skill level is too advanced for that course.

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for successful completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend. See the Course Description (RUS prefix) section of this catalog for individual Russian language courses and their prerequisites.

SIGN LANGUAGE INTERPRETATION (SLIP)

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4672 (V); 1-866-970-7933 (VP)
www.pcc.edu/sign

CAREER AND PROGRAM DESCRIPTION

Professional sign language interpreters work in a variety of settings such as education, social service, religion, government, business, performing arts, mental health, medical, legal, video relay and law enforcement. Interpreters may specialize in one area or may work in private practice in a variety of settings. The majority of graduates from this program are hired into entry level positions in educational settings. Currently, the demand for services exceeds the supply of interpreters nationwide.

The program focuses on the acquisition of bi-cultural and bi-lingual abilities and on both transliteration and interpretation skills. Students may retake courses which will assist them in developing exit competencies.

An articulation agreement between PCC and Marylhurst University allows students to apply credits earned in Sign Language Interpretation (SLIP) toward a bachelor degree in Human Studies at Marylhurst. For more information, contact the department office.

A transfer agreement between PCC and Portland State University allows students to apply credits earned in Sign Language Interpretation (SLIP) AAS degree or Deaf Studies Certification toward a bachelor degree in any major at Portland State University. For more information, contact the SLIP department office.

DEGREE AND CERTIFICATES OFFERED

- **Associate of Applied Science Degree**
  - Sign Language Interpretation

- **Two-Year Certificate**
  - Sign Language Interpretation

- **One-Year Certificate**
  - Deaf Studies
PREREQUISITES AND REQUIREMENTS

1. Submit an application.
2. Complete WR 121 with a C or better prior to entering the program.
3. Complete ASL 240 with a C or better prior to entering the program. Students taking any prerequisites classes during the summer prior to enrollment may be tentatively accepted based on their progress in the course at midterm, with final acceptance pending successful completion of the course.
4. Complete ASL 101, 102, 103, and 201, 202, 203 or ASL 150, 151, 250, 251 with a C or better prior to entering the program.
5. Demonstrate American Sign Language and spoken English competencies through department-administered assessment.

The deadline to complete steps 1-4 above is the third Friday in March. Once step 4 is complete, students will be given a language assessment. Minimum entrance requirements are intermediate level for ASL and superior level for English. Candidates with higher language competencies will be awarded seats before those with lower language competencies.

ASL 240 Deaf Studies is a lecture course listed under Sign Language Studies in the college schedule and serves as a prerequisite course.

This is a full-time two year (six term) program for students interested in sign language interpretation as a career. A maximum of 25 students will be accepted annually starting in the fall term. There are five practicum courses which place students in contact with Deaf people, employers and professional interpreters. Students must pass a qualifying exam before being accepted into an internship. Graduation is dependent upon entrance into and successful completion of an internship under the direction of a professional interpreter who acts as a mentor.

Students who require additional time to master interpreting skills may return after completion of second year courses to prepare to enter and complete this internship by re-taking and passing the qualifying exam. SLIP coursework which would assist this development is available to the candidate. These courses must be taken for credit. Please make arrangements with the SLIP Department.

Students in the Sign Language Interpretation Program, who find that interpreting is not an appropriate goal for them, may transfer to the Deaf Studies program. They must complete a separate application packet and explore possible occupations as part of the application process. Coursework for the Deaf Studies certification closely parallels that of the SLIP, with the omission of some of the hands on interpreting courses. The Deaf Studies certification does not qualify students to work as interpreters, but may be helpful to those who work with deaf people in a field other than interpreting such as educational paraprofessional, or working in an agency that serves Deaf people. Deaf Studies is a certificate program and does not lead to an associate's degree.

The following courses are required of all students accepted into the SLIP. Students must receive passing grades as determined by program policy to maintain student status in the program. Students are required to take either ITP 283 or ITP 284 for graduation from the Two-Year Certificate program, or with the Associate of Applied Science Degree.

Note: All courses within the SLIP are open to individual professional interpreters and to other professionals working in fields serving Deaf people. This is subject to course availability, class size and program permission based on prerequisite skill and knowledge. In addition, groups and organizations such as school districts may contract with the SLIP for custom-designed courses for their staff. Because interpreters work in a variety of settings, students are encouraged to broaden their general knowledge in a variety of areas. For those planning to work in K-12 or post secondary education, background in English, writing and literature, history, science, social studies, math and basic computer use is essential. SLIP students may find the following electives helpful: SP 100, 111, 140 and TA 144.

SIGN LANGUAGE INTERPRETATION

AAS DEGREE

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Sign Language Interpretation Degree Credit Summary

<table>
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<td>ITP</td>
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<td>Remaining GE</td>
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<td>HEC/PSY</td>
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<td><strong>Total</strong></td>
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COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

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<td>ITP</td>
<td>111</td>
</tr>
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<td>ITP</td>
<td>120</td>
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<tr>
<td>ITP</td>
<td>131</td>
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Second Term

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<td>ITP</td>
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<td>ITP</td>
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</table>

Third Term

<table>
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<th>Course Type</th>
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<td>ITP</td>
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</tr>
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<td>ITP</td>
<td>121</td>
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<tr>
<td>ITP</td>
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</tr>
<tr>
<td>ITP</td>
<td>231</td>
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<td>ITP</td>
<td>272</td>
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<td>ITP</td>
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</table>

Fourth Term

<table>
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</tr>
<tr>
<td>ITP</td>
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<tr>
<td>ITP</td>
<td>273</td>
</tr>
<tr>
<td>ITP</td>
<td>281</td>
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<tr>
<td>ITP</td>
<td>262</td>
</tr>
<tr>
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</table>
Fifth Term
ITP 212 American Sign Language V 3
ITP 261 Interpreting Theory II 3
ITP 283 Interpreting Internship I** 3
ITP 274 Interpreting Process V 6
HEC 226 Child Development* 4
or
PSY 215 Human Development* 4

Sixth Term
ITP 275 Interpreting Process VI 4
ITP 284 Interpreting Internship II** 3

General Education
*Could be used as General Education
** Only one internship is required.

SIGN LANGUAGE INTERPRETATION TWO-YEAR CERTIFICATE
Minimum 89 credits. Students must meet certificate requirements. The Sign Language Interpretation Certificate is a related certificate. All courses are contained in the Sign Language Interpretation AAS Degree.

Sign Language Interpretation Certificate Credit Summary
ITP 85
HEC/PSY 4
Credit Total 89

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
ITP 111 American Sign Language I 5
ITP 120 Fingerspelling I 2
ITP 131 Deaf Culture 4
ITP 270 Interpreting Process I 4

Second Term
ITP 112 American Sign Language II 5
ITP 230 American Sign Language Linguistics I 3
ITP 260 Interpreting Theory I 3
ITP 180 Field Experience 1

Third Term
ITP 113 American Sign Language III 5
ITP 121 Fingerspelling II 2
ITP 276 Specialized Discourse I 3
ITP 231 American Sign Language Linguistics II 2
ITP 272 Interpreting Process II 4
ITP 279 Mock Interpreting I 1

Fourth Term
ITP 211 American Sign Language IV 3
ITP 277 Specialized Discourse II 3
ITP 273 Interpreting Process IV 6
ITP 281 Mock Interpreting II 2
ITP 262 Interpreting Theory III 4

Fifth Term
ITP 212 American Sign Language V 3
ITP 261 Interpreting Theory II 3
ITP 283 Interpreting Internship I** 3
ITP 274 Interpreting Process V 6

HEC 226 Child Development 4
or
PSY 215 Human Development (4)

Sixth Term
ITP 275 Interpreting Process VI 4
ITP 284 Interpreting Internship II** 3

** Only one internship (ITP 283 or 284) is required for an interpreting degree or certificate, however, students are strongly encouraged to take both.
Note: HEC 226 or PSY 215 can be taken during any term.

DEAF STUDIES ONE-YEAR CERTIFICATE
Minimum 52 credits. Students must meet certificate requirements.

Deaf Studies Certificate Credit Summary
ITP 48
HEC/PSY 4
Credit Total 52

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
ITP 111 American Sign Language I 5
ITP 120 Fingerspelling I 2
ITP 131 Deaf Culture 4

Second Term
ITP 112 American Sign Language II 5
ITP 230 American Sign Language Linguistics I 3
ITP 260 Interpreting Theory I 3
ITP 180 Field Experience 1

Third Term
ITP 113 American Sign Language III 5
ITP 121 Fingerspelling II 2
ITP 276 Specialized Discourse I 3
ITP 231 American Sign Language Linguistics II 2
ITP 272 Interpreting Process II 4
ITP 279 Mock Interpreting I 1

Fourth Term
ITP 211 American Sign Language IV 3
ITP 262 Interpreting Theory III 4
HEC 226 Child Development 4
or
PSY 215 Human Development 4

Fifth Term
ITP 212 American Sign Language V 3
ITP 261 Interpreting Theory II 3
ITP 285 Deaf Studies Internship 3

Note: HEC 226 or PSY 215 can be taken during any terms.

SIGN LANGUAGE STUDIES (SLS)
Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4672 (V), 1-866-970-7933 (VP)

DESCRIPTION
American Sign Language (ASL) is the language used by Deaf people in the United States and parts of Canada when communicating with each other. ASL courses are offered for General
SOCIETY

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146

Rock Creek Campus
Building 3, Room 201
971-722-7327

Sylvania Campus
Social Science Building (SS), Room 217
971-722-4289

DESCRIPTION

Sociology is the scientific study of human interaction, with a focus on social groups and systems. Using sociological concepts, theories, and research, sociologists try to understand patterns of social behavior within varying cultures, structures, and institutions. We examine group dynamics, social norms, deviance, systems of inequality, and the causes, consequences, and solutions of different social problems.

The goal of PCC’s sociology courses is to increase students’ awareness of how social forces affect their lives. Sociology also provides students the opportunity to critically evaluate sociological processes that occur in the world around them. These skills are essential in a rapidly changing world. Whatever career a student chooses, from engineering to social services, sociology provides a foundation for understanding how the world works and the role we can play within it.

Sociology in Everyday Life (SOC 204) and Social Change in Societies (SOC 205) introduce students to core concepts, theories, and research in sociology. It is recommended, but not required, that the courses be taken in sequence. The additional sociology courses apply the sociological perspective to specific topics and issues within society, including social problems, diversity, gender roles, aging, the environment, peace and conflict, and social movements.

Many Sociology courses also offer service-learning and cooperative education options. These teaching and learning tools allow students to apply course material to community service activities and internships, with reflection assignments connected back to course learning objectives.

See the Course Description (SOC prefix) section of this catalog for individual sociology courses and course prerequisites.

SPANISH

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7235

Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-3585

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4851

DESCRIPTION

All PCC Spanish courses are taught using an immersion method. The objective of all Spanish courses at PCC is to help students to develop communicative competence and proficiency in comprehension, speaking, reading, and writing Spanish as well as cultural awareness. Assessment is based on consistent attendance, active participation, and written and oral assignments.

There are no requirements or prerequisites for entry into the first term of first year Spanish. However, the student should read the Spanish course descriptions for other Spanish courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will not be admitted to a course if their skill level is too advanced for that course.

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend. Students who have studied sign language elsewhere and wish to continue at PCC must make an appointment for a Sign Language Proficiency Interview (SLPI.)

There are no prerequisites for entry into the first term of first year American Sign Language. However, students should read the Sign Language Studies course descriptions for the prerequisites for other American Sign Language courses.
THEATRE ARTS

Cascade Campus
Moriarty Arts and Humanities Building
971-722-5314

Rock Creek Campus
Building 3, Room 201
971-722-7235

Sylvania Campus
Performing Arts Center
971-722-4323
Box Office 971-722-4949

www.pcc.edu/programs/theatre/

DESCRIPTION

In the Sylvania campus’ Performing Arts Center, housing a state-of-the-art proscenium theater, the PCC Theatre Arts program mounts three fully stages productions each academic year and teaches a wide variety of courses in the dramatic arts. Our popular productions utilize student actors, technicians, crew and occasionally student designers while ranging across a wide swath of compelling and entertaining periods and genres. PCC Theatre courses prepare community college students in the arts of acting, design, play writing and stagecraft. Our students often go on to obtain professional employment, are active in many areas of semi-professional theatre, or excel when transferring to four-year academic programs. Students in our program have competed in the Kennedy Center/American College Theatre Festival and have brought home regional and national awards. Our students find professional employment as technicians or actors, or excel when transferring to four-year academic programs.

Theatre Arts courses provide a nurturing atmosphere for exploration of this most collaborative and compelling art form. We offer hands-on classes in technical theatre, improvisation, acting for stage and camera, play writing, scenic and lighting design. In addition, the popular annual student One-Act Play Festival showcases short original plays written, directed, acted, and designed by PCC students. The Theatre Arts Club also produces numerous 24-hour plays and original works, while the Improvisational Club (PANTS) performs regularly and has won local acclaim and competitions. Some courses are also taught at the Cascade and Rock Creek campuses but no main-stage productions are mounted on those campuses.

VETERINARY TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
971-722-7461

www.pcc.edu/vet

CAREER AND PROGRAM DESCRIPTION

Veterinary technicians work with veterinarians and are skilled and knowledgeable in the practical application of aspects involved in the care and handling of animals, clinical laboratory procedures, animal diseases, animal nutrition, pharmacology, radiography, anesthesiology and medical and surgical assistance. Graduates are prepared to function as competent veterinary technicians in small and large animal hospitals and clinics, laboratory animal research facilities, educational institutions, animal shelters, military service and commercial firms. The program also emphasizes the development of professional attitudes and interpersonal skills expected of health care professionals.

This program is fully accredited by the Committee on Veterinary Technician Education and Activities of the American Veterinary Medical Association. Graduates are eligible to take the Veterinary Technician National Examination administered by the Oregon Board of Veterinary Medical Examiners. Graduates are also eligible for licensure in other states.

This is a seven-term, full time program. All Veterinary Technology courses must be taken in the sequential order in the course of study below. All Veterinary Technology courses must be completed with a C or better to qualify for continuation in the program.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Veterinary Technology

PREREQUISITES AND REQUIREMENTS

College placement tests are administered through assessment centers.

1. Writing skills placement at WR 121 or documented previous college level work.
2. Completing MTH 65, or MTH 63 with a C or better, or passing a math class with a C or better for which MTH 65 or higher level math skills are a prerequisite, or passing the PCC competency exam for MTH 65 or placement into MTH 95 or higher.
3. High school diploma, GED certificate, or equivalent required.
4. Completion of CH 100 Fundamentals of Chemistry, its equivalent or higher with a C or better.
5. Completion of BI 112 Cell Biology for Health Occupations, its equivalent or higher with a C or better.

The Veterinary Technology program is a closed entry program with limited enrollment. Completing admission requirements and applying to the program does not guarantee admission. Admission to the first year of the program is based on high school and college grades, meeting the above program prerequisites, completion of required observation hours with a veterinarian, a letter of recommendation, and an interview. A minimum of forty hours of observation with a veterinarian is required. This may be done as a paid employee or as a volunteer.

For specific eligibility requirements, a complete list of application materials and to obtain an admission packet, contact the department or visit the program website: www.pcc.edu/programs/vet-tech/. In order to be considered for admittance into fall term, all application materials are due by May 1st. Only students who have been officially accepted into the program or those who have prior approval may enroll in courses.
VETERINARY TECHNOLOGY AAS DEGREE
Minimum 104 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Veterinary Technology Degree Credit Summary
<table>
<thead>
<tr>
<th>VT</th>
<th>84</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
</tbody>
</table>
Credit Total 104

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- VT 100 Veterinary Medical Terminology 2
- VT 101 Introduction to Veterinary Technology 2
- VT 121 Basic Animal Science 4
- VT 105 Comparative Veterinary Anatomy and Physiology I 4
- WR 121 English Composition 4
General Education 4

Second Term
- VT 102 Animal Nursing and Restraint 3
- VT 107 Veterinary Parasitology and Pathology 3
- VT 108 Pharmaceutical Mathematics I 1
- VT 106 Comparative Veterinary Anatomy and Physiology II 4
General Education 4

Third Term
- VT 103 Animal Health Record Systems 3
- VT 110 Specimen Collection Laboratory 1
- VT 111 Hematology and Urinalysis 5
General Education 4

Fourth Term
- VT 109 Radiation Safety 2
- VT 112 Clinical Laboratory Procedures 5
- VT 113 Veterinary Microbiology 3
- VT 280A Cooperative Education 4
General Education 4

Fifth Term
- VT 201 Anesthesiology 3
- VT 204 Applied Radiography 3
- VT 205 Veterinary Pharmacology 4
- VT 211 Pharmaceutical Mathematics II 1

Sixth Term
- VT 202 Surgical Nursing and Lab Animal Procedures 4
- VT 207 Public Health and Sanitation 2
- VT 208 Small Animal Diseases 4
- VT 280B Cooperative Education 4

Seventh Term
- VT 203 Veterinary Procedures Seminar 3
- VT 209 Large Animal Diseases and Procedures 3
- VT 210 Animal Nutrition 3
- VT 280C Cooperative Education 4

VIDEO PRODUCTION
SEE MULTIMEDIA

WELDING TECHNOLOGY
Rock Creek Campus
Building 2, Room 131
971-722-7600 or 971-722-7331
Swan Island
Welding Center
5555 N Channel Ave
503-247-1724
www.pcc.edu/weld

CAREER AND PROGRAM DESCRIPTION
Welding is a skill used by many trades: sheet metal workers, iron-workers, boilermakers, carpenters, steamfitters, glaziers and repair and maintenance personnel in applications ranging from the home hobbyist to heavy fabrication of bridges, ships and many other projects. A variety of welding processes are used to join units of metal.

The Welding Technology Program has been developed specifically as an open entry and open exit (OEOE) program. The program is designed to fit the needs of a student (take as few or as many courses as desired), and have the following characteristics: open entry (enter at any time during the term); self-paced (learn at your own pace); flexible (select your own attendance schedule); individualized (a program can be tailor-made to fit specific needs); and, open exit (leave the program when you have met your training goals/needs).


Consult a program advisor through the department to help plan a course of study that will allow you to achieve your educational goals.

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
Welding Technology

Two-Year Certificate
Welding Technology - Suspended

Less than One-Year Certificate
Welding Technology

PREREQUISITES AND REQUIREMENTS
Contact department for program advising.
WELDING TECHNOLOGY AAS DEGREE
Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program/academic advisors for course planning.

Welding Technology Degree Credit Summary
WLD 69
Welding Program Electives 12
General Education 16
Credit Total 97

Welding Degree Courses
WLD 101 Welding Processes and Applications 4
WLD 102 Blue Print Reading 4
WLD 111 Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting 4
WLD 112 Shielded Metal Arc Welding: Mild Steel I (E7018) 4
WLD 113 Shielded Metal Arc Welding: Mild Steel II (E7018) 4
WLD 114 Shielded Metal Arc Welding: Mild Steel III (E6011) 3
WLD 131 Gas Metal Arc Welding 3
WLD 132 Gas Metal Arc Welding-Pulse 3
WLD 141 Flux-Cored Arc Welding I (Gas Shielded) 3
WLD 142 Flux-Cored Arc Welding II (Self Shielding) 3
WLD 151 SMAW Certification Practice: Unlimited Thickness Mild Steel 3
WLD 152 Wire Welding Certification Practice 6
WLD 203 Structural Steel Welding Codes and Standards 4
WLD 221 Gas Tungsten Arc Welding: Mild Steel 3
WLD 222 Gas Tungsten Arc Welding: Aluminum 3
WLD 223 Gas Tungsten Arc Welding: Stainless Steel 3
WLD 261 Basic Fabrication I 6
WLD 263 Welding Technology-Capstone 6
Welding Program Electives 12
General Education 16

WELDING TECHNOLOGY TWO-YEAR CERTIFICATE
The Welding Technology Two-Year Certificate has been suspended for the 2012-2013 academic year. For more information or availability of courses please contact the department at 971-722-7600 or visit the department website at www.pcc.edu/weld.

WELDING TECHNOLOGY LESS THAN ONE-YEAR CERTIFICATE
Minimum 44 credits. Students must meet certificate requirements. The Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.

Welding Technology Certificate Summary
WLD 44

Welding Technology Certificate Courses
WLD 101 Welding Processes and Applications 4
WLD 102 Blue Print Reading 4
WLD 111 Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting 4

WOMEN’S STUDIES
Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7248

Sylvania Campus
Communication Technology Building (CT), Room 219
971-722-4265
www.pcc.edu/programs/womens-studies/
DESCRIPTION

Women’s Studies introduces the past and present achievements and experiences of women from an interdisciplinary and global perspective. The courses explore the decisive role that gender has played and continues to play in human societies and contributes to an understanding of women’s lives. Knowledge derived from women’s studies courses will enable people to analyze current problems that women face in the areas of employment, the family, domestic violence, health and the legal system. Since women comprise more than half of the world’s population, an understanding of their experiences, history, needs and abilities is an asset to students considering careers in such fields as education, social service, government, business, law, the ministry, journalism, health occupations and childcare.

Women's Studies courses require college-level reading and writing skills.

All women's studies courses can apply towards the Associate of Arts, Oregon Transfer Degree (AAOT) requirements. Women's Studies (WS 101) may be taken for either arts and letters credit, or social science credit.

The Women's Studies Focus Award at PCC prepares students for entry into other Women's Studies Programs at the bachelor's degree level. In Oregon these programs can be found at Portland State University, University of Oregon, Oregon State University, and Lewis and Clark College. Additional information on the Women's Studies Focus Award may be found in the Focus Award section of the catalog. See the Course Description (WS prefix) section of this catalog for individual Women’s Studies courses and their prerequisites.

FOCUS AWARDS

Focus Awards recognize the completion of a collection of courses in an area of study. By taking the courses required for a Focus Award, students deepen and broaden their knowledge and experience in that particular area of study. This can be particularly helpful as a head start toward a major at a four-year institution where a student might transfer. Focus Awards are administered and awarded by the responsible Division Dean. Focus Awards are not to be confused with degrees or certificates, are not officially recognized by the state, and do not appear on transcripts.

ASIAN STUDIES FOCUS AWARD

www.pcc.edu/programs/asian-studies/

PCC’s Asian studies foster a richer understanding and appreciation of the cultures of Asia. A minimum of sixteen credits from the courses listed below entitles students to receive an Asian Studies Focus Award, which will show prospective employers and transfer colleges a foundational focus on Asia. These studies encourage broader reflections about the nature of culture and how it shapes everything from world views to daily life. Above all, the focus award enables students to develop a multidimensional perspective on Asia, its many cultures, and their own life experience as well.
Asian Studies Focus Award Requirements:

To receive the Asian Studies Focus Award, a student will complete at least 16 credits from the following choices, which must:

- Include no more than two courses from one discipline (e.g. Art, Japanese, Literature)
- Cover more than one geographic area of Asia
- Include no more than one general course, in which the student should focus on Asian topics (ATH 103; BA 203; GEO 107; MUS 108; PS 204; PS 205; R 210; SP 140; WS 201).

Although only two courses from one discipline may apply toward the award, we encourage and wholeheartedly support taking two full years of an Asian language.

Courses may be selected from the following:

**Anthropology**

ATH 103  Introduction to Cultural Anthropology  4

**Art**

ART 207  History of Asian Art: India  4
ART 208  History of Asian Art: China  4
ART 209  History of Asian Art: Japan  4

**Business Administration**

BA 203  International Business  3

**Chinese**

All language and culture credit courses may apply to the focus award. They vary from 3-5 credits.

**Geography**

GEO 107  Geography of the Developing World  4

**History**

HST 105  History of India and the South Asian Region  4
HST 106  History of China  4
HST 107  History of Korea and Japan  4

**Japanese**

All language and culture credit courses may apply to the focus award. They vary from 1-6 credits.

**Literature**

ENG 207  World Literature: Asian–Indian  4
ENG 208  World Literature: Asian–Chinese  4
ENG 209  World Literature: Asian–Japanese  4

**Music**

MUS 108  Music Cultures of the World  4

**Philosophy**

PHL 210  Introduction to Asian Philosophy  4

**Political Science**

PS 204  Comparative Political Systems  4
PS 205  Global Politics  4

**Religious Studies**

R 210  World Religions  4

**Communication Studies**

SP 140  Introduction to Intercultural Communication  4

**Women’s Studies**

WS 201  Women of the World  4

*Courses subject to approval*

Other

Other courses may apply if they can be shown to have a clear Asian focus and the student’s work in the course (e.g. research papers) is focused on Asian topics.

To receive this focus award, go to the English and World Languages Division at Sylvania Campus, CT 219.

PCC is a Regional Center of the East-West Center’s Asian Studies Development Program (ASDP). More information can be found at www.eastwestcenter.org.

**BLACK STUDIES FOCUS AWARD**

PCC’s Black Studies courses contribute to the understanding of the unique issues that people of African ancestry face in the modern world by taking an interdisciplinary approach to examine the economics, history, politics, culture, literature, and art of the African Diaspora.

PCC offers one of the largest selections of courses that reflect the Black experience. This focus award enhances existing degrees and certificates and shows prospective employers and transfer colleges a foundational focus on the black experience and multicultural issues. In addition, students completing the Africa series of courses build a foundation for International Studies. Students completing the award will be eligible for the lower division course requirements for Portland State University’s Black Studies degree.

Students who are applying for the Black Studies Focus Award should call 971-722-5637.

Black Studies Focus Award Requirements:

To receive the Black Studies Focus Award, a student will complete at least 16 credits from the following choices, with no more than two courses from one discipline.

Courses may be selected from the following:

**English**

ENG 256  African American Literature I  4
ENG 257  African American Literature II  4
ENG 258  African American Literature III  4

**Humanities**

HUM 204  African History  4
HUM 205  African Literature  4
HUM 206  African Art  4
HUM 214  Race and Racism  4

**History**

HST 274  African American History I  4
HST 275  African American History II  4
HST 276  African American History III  4
HST 284  History of Africa  4

**Music**

MUS 205  Intro to Jazz History  3
MUS 208  African American Music  3
MUS 209  African American Music  3
MUS 210  African American Music  3

**Sociology**

SOC 213  Diversity in the United States  4
CREATIVE WRITING FOCUS AWARD

www.pcc.edu/programs/writing/creative/

The Creative Writing Focus Award is designed to offer students a rounded experience in the craft of creative writing. Students work on their own writing, workshop their writing and the writing of others, study literature and learn about editing and publishing. This program introduces students to the field of creative writing as well as enhancing degrees from other disciplines. Through introductory and advanced courses in creative writing and literature, a Creative Writing Focus Award empowers students to realize themselves as writers and imagine the possibilities of a career in creative writing.

All courses required for a Creative Writing Focus Award meet AAOT (Associate of Arts, Oregon Transfer Degree) requirements.

Program Requirements
Students will complete 20 credits that includes:

8 credits of introductory courses
WR 240 Creative Writing—Creative Nonfiction
WR 241 Creative Writing—Fiction
WR 242 Creative Writing—Poetry
WR 243 Creative Writing—Scriptwriting

4 credits of
WR 246 Advanced Creative Writing—Editing and Publishing (or waiver—see notes)

4 credits of advanced courses
WR 244 Advanced Creative Writing—Fiction
WR 245 Advanced Creative Writing—Poetry
WR 247 Advanced Creative Writing—Scriptwriting
WR 248 Advanced Creative Writing—Creative Nonfiction

For a second time
WR 246

4 credits of diversity literature classes
ENG 207 World Literature - Asian (India)
ENG 208 World Literature - Asian (China)
ENG 209 World Literature - Asian (Japan)
ENG 211 Contemporary African Literature
ENG 213 Latin American Literature
ENG 222 Images of Women in Literature
ENG 240 Native American Literature
ENG 244 Asian American Literature
ENG 250 Introduction to Folklore and Mythology
ENG 256 African American Literature
ENG 257 African American Literature
ENG 258 African American Literature
ENG 260 Introduction to Women Writers
ENG 265 International Political Poetry
HUM 205 African Literature

Note: WR 246 may be waived, subject to approval by the Creative Writing Department Chair, on the grounds of schedule conflict or equivalent experience. A waiver would require students to take another creative writing class, beginning or advanced, that they have not taken before.

Students completing all three terms of WR 246 will receive an Emphasis Plus.

All advanced creative writing courses and diversity literature classes must be taken at Portland Community College.

WR 246 may be taken three times for credit.

COMMUNICATION STUDIES FOCUS AWARD

The Communication Studies Focus Award recognizes students who have gained considerable background in Communication Studies as part of their certificate or transfer degree program. The award is granted to students who have completed the required combination of Communication Studies courses. This award is especially useful for students seeking to minor or major in Communication Studies at Portland State University or any Oregon college or university. Students who wish to transfer to a college or university outside Oregon should check with the specific institution for course transferability.

Students who are applying for the Communication Studies Focus Award should call 971-722-4854

Communication Studies Focus Award Requirements

1. Students must complete six or more courses all with a C or better:
   A. Two required courses
   B. Four electives

Required Courses
SP 100 Introduction to Speech Communication 4
SP 111 Public Speaking 4

Select four or more courses from the following
SP 105 Listening 4
SP 110 Voice and Articulation 3
SP 112 Persuasion 4
SP 130 Business and Professional Communication 4
SP 140 Introduction to Intercultural Communication* 4
SP 212 Voice and Diction 4
SP 214 Interpersonal Communication 4
SP 215 Small Group Communication 4
SP 227 Nonverbal Communication 4
SP 228 Mass Communication 4
or
J 201 Mass Media and Society 4
SP 229 Oral Interpretation 3
SP 237 Gender and Communication 4
SP 270 Forensics: Speech and Debate 3

HEALTH STUDIES FOCUS AWARD

The Health Studies Award provides students with: An introductory body of knowledge in Health Studies to prepare them for further academic study and transfer to a four-year institution or exploration of careers in the health care industry.

- Opportunities to build their understanding of the complex factors, forces and institutions that influence individual, community, environmental and global health. Academic support, guidance, and encouragement through faculty-student mentoring.
- Opportunities to network with local four-year universities and colleges.

The Health Studies Award prepares students to pursue health studies and related programs at the bachelor level. In Oregon,
these programs can be found at Portland State University, Oregon State University, other schools in the Oregon University System and private colleges.

Students receiving the Health Studies Award will have successfully completed a minimum of 15 credits (with a C or better) from the following choices, which must include:

- Core Health Courses
- An additional course from Elective Health Courses
- Remainder of credits from Elective Health Courses or Approved Related Course List

### Health Core Required Courses

<table>
<thead>
<tr>
<th>HE 250</th>
<th>Personal Health</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>or HPE 295</td>
<td>Health and Fitness for Life</td>
<td>3</td>
</tr>
</tbody>
</table>

| HE 251 | Community and Public Health Issues | 4 |

### Elective Health Courses (one required, additional may be selected)

| HE 212 | Women's Health* | 4 |
| HE 213 | Men’s Health | 4 |
| HE 242 | Stress and Human Health* | 4 |
| HE 255 | Film and Public Health* | 4 |
| HE 264 | Health, Food, and the Environment | 3 |

| AD 241 | Prevention, Theory, and Practice | 3 |
| ESR 171 | Environmental Studies | 4 |
| FN 225 | Nutrition | 4 |
| PSY 215 | Human Development | 4 |
| SOC 231 | Sociology of Health and Aging | 4 |

| PS 211 | Peace and Conflict | 4 |
| PS 280B | CE: Community Service and Action Seminar 2 | 2 |
| PS 280C | CE: Peace and Conflict | varied |

### Approved Related Courses

| ATH 103 | Introduction to Cultural Anthropology | 4 |
| EC 216 | Labor Markets: Economics of Gender and Work | 3 |
| ENG 261 | Literature of Science Fiction | 4 |
| HST 203 | History of the United States - III | 4 |
| PHL 202 | Introduction to Philosophy: Elementary Ethics | 4 |
| PS 201 | U.S. Government: Foundation and Principles | 4 |
| PSY 216 | Social Psychology | 4 |
| SOC 204 | Sociology in Everyday Life | 4 |
| SOC 205 | Social Change in Societies | 4 |
| SOC 206 | Social Problems | 4 |

### Category I: Personal to Societal Peace and Conflict

Students who are applying for the Peace and Conflict Focus Award should call 971-722-5152.

### PACS I Focus Award Requirements

1. A minimum of 18 credits, including PS 211 (or equivalent.)
2. At least one course from each of three course categories (out of the five available course categories.)

### PACS II Focus Award Requirements

1. A minimum of 30 credits; includes PS 211 (or equivalent), at least one credit in cooperative education (PS 280C or equivalent) and a two-credit cooperative education seminar (PS 280B or equivalent.)
2. At least one course from each of the five course categories, with no more than three of these courses coming from any one subject area discipline, and at least two coming from outside of the social sciences.

### PACS III Focus Award Requirements

1. A minimum of 45 credits, includes PS 211 (or equivalent), at least one credit in cooperative education (PS 280C or equivalent), and a two credit cooperative education seminar (PS 280B or equivalent.)
2. At least one course from each of the five course categories, with no more than four of these courses coming from any one subject area discipline, and at least three coming from outside of the social sciences.
3. Inclusion of at least three courses concentrated in at least one course category.

### Integrative Courses

| PS 211 | Peace and Conflict | 4 |
| PS 280B | CE: Community Service and Action Seminar 2 | 2 |
| PS 280C | CE: Peace and Conflict | varied |

### Category I: Personal to Societal Peace and Conflict

| ATH 103 | Introduction to Cultural Anthropology | 4 |
| EC 216 | Labor Markets: Economics of Gender and Work | 3 |
| ENG 261 | Literature of Science Fiction | 4 |
| HST 203 | History of the United States - III | 4 |
| PHL 202 | Introduction to Philosophy: Elementary Ethics | 4 |
| PS 201 | U.S. Government: Foundation and Principles | 4 |
| PSY 216 | Social Psychology | 4 |
| SOC 204 | Sociology in Everyday Life | 4 |
| SOC 205 | Social Change in Societies | 4 |
| SOC 206 | Social Problems | 4 |

### Category II: Race and Gender, and Peace and Conflict

| ENG 212 | Biography and Autobiography | 4 |
| ENG 222 | Images of Women in Literature | 4 |
| ENG 240 | Introduction to Native American Literatures | 4 |
| ENG 258 | African American Literature | 4 |
| ENG 260 | Introduction to Women Writers | 4 |
| HST 205 | History of Women in the United States: 1920 to Present | 4 |
| HST 218 | Native American Indian History | 4 |
| HST 225 | History of Women, Sex, and the Family | 4 |
| HST 276 | African American History - III | 4 |
| SOC 218 | Sociology of Gender | 4 |

### Category III: Environmental and Ecological Peace and Conflict

| ATH 214 | Human Environments: Ecological Aspects | 4 |
| ATH 215 | Human Environments: Energy Consideration | 3 |
| BI 141 | Habitats: Life of the Forest | 4 |
| BI 142 | Habitats: Marine Biology | 4 |
| BI 143 | Habitats: Fresh Water Biology | 4 |
| GEO 105 | Introduction to Human Geography | 4 |
| GEO 106 | Geography of the Developed World | 4 |
| GEO 209 | Physical Geography: Weather and Climate | 4 |
| ESR 171 | Environmental Science: Biological Perspectives | 4 |
| ESR 172 | Environmental Science: Chemical Perspectives | 4 |
| ESR 173 | Environmental Science: Geological Perspectives | 4 |
FOCUS AWARDS

Category IV: Global Peace and Conflict
EC 230  Contemporary World Economic Issues: International Economics  3
ENG 265  International Political Poetry  4
GEO 107  Geography of the Developed World  4
HST 103  Western Civilization: Modern Europe  4
PS 205  Global Politics: Conflict and Cooperation  4
PS 220  U.S. Foreign Policy  4
PS 225  Political Ideology: Idea Systems  4

Category V: Communication: Peace and Conflict
ENG 197  Contemporary Themes and Genres  4
MUS 207  Introduction to the History of Folk Music  3
PHL 191  Critical Thinking: Language and the Layout of Argument  4
PHL 197  Critical Thinking: TV and the Presentation of Reality  4
SP 100  Introduction to Speech Communication  4
SP 105  Listening  4
SP 140  Introduction to Intercultural Communication  4

Note: Other courses, or even sections of courses, may also be available for PACS Focus award credit. Consult a PACS Program advisor for the most up-to-date information.

PERFORMING ARTS FOCUS AWARD

The Performing Arts Focus Award recognizes students who have gained considerable background in the performing arts as part of their certificate or transfer degree program. The award is granted to students who have completed the required combination of performing arts courses.

Students who are applying for the Performing Arts Focus Award should call 971-722-4854.

Performing Arts Focus Award Requirements
There are four possible tracks to earn a Performing Arts Focus Award: Music, Dance, Theatre Performance, or Technical Theatre.

Students must complete with a C or better in each class of a specific set of required and elective courses in order to receive the award. Specific requirements are listed below:

If your emphasis is on Dance, you will have 6 classes in dance and a selection of at least one course in Music, Theatre and Communication.

If your emphasis is in Music, you will have 3 classes of required Music courses, and a selection of at least one dance course, at least one theatre course, and at least one communication course.

If your emphasis is in Theatre Performance or Technical Theatre, you will have 3 classes of required TA courses and a selection of at least one dance course, at least one music course, and at least one communication course.

Dance Required Courses
- One course in Ballet
- One course in Modern
- Four courses of other Dance courses (Tap, Jazz, Hip Hop, World Dance, Ballroom)
- One course each from the other areas for a total of nine courses.

Music Required Courses:
MUS 111  Music Theory I (Part One)  3
MUS 112  Music Theory I (Part Two)  3
MUS 113  Music Theory I (Part Three)  3

One course each from other areas for a total of six courses.

Theatre Performance Required Courses:
TA 141  Fundamentals of Acting Techniques  4
TA 142  Fundamentals of Acting Techniques  4
TA 143  Fundamentals of Acting Techniques  4

One course from the following list:
TA 101  Theatre Appreciation  4
TA 111  Fundamentals of Technical Theatre  4
TA 144  Improvisational Theatre  3
TA 180C  Theater Rehearsal and Performance  3

One course each from other areas for a total of six courses.

Technical Theatre Required Courses:
TA 111  Fundamentals of Technical Theatre  4
TA 190C  Projects in Theatre  3

One course from the following:
TA 112  Introduction to Set Design  4
TA 113  Introduction to Stage Lighting  4
TA 116  Stagecraft  3

One course each from other areas for a total of six courses.

In addition to the emphasis courses, students should select at least one from each area outside your emphasis:

Any Dance class
MUS 105  Music Appreciation  3
MUS 108  Music Cultures of the World  3
MUS 110  Fundamentals of Music  4
MUS 205  Introduction to Jazz History  3
MUS 206  Introduction to the History of Rock Music  3
MUS 220  Chorus  1
TA 101  Theatre Appreciation  4
TA 111  Fundamentals of Technical Theatre  4
TA 141  Fundamentals of Acting Techniques  4
TA 180C  Theater Rehearsal and Performance  3
TA 190C  Projects in Theatre  3
SP 100  Introduction to Speech Communication  4
SP 111  Public Speaking  4
SP 112  Persuasion, Argumentation and Debate  4
SP 214  Interpersonal Communication: Process and Theory  4
SP 215  Small Group Communication: Process and Theory  4
WOMEN’S STUDIES
FOCUS AWARD

Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4289

Rock Creek Campus
Building 3, Room 201
971-722-7539

www.pcc.edu/programs/womens-studies/

DESCRIPTION
Women’s Studies introduces the past and present achievements and experiences of women from an interdisciplinary and global perspective. The courses explore the decisive role that gender has played and continues to play in human societies and contributes to an understanding of women’s lives. Knowledge derived from women's studies courses will enable people to analyze current problems that women face in the areas of employment, the family, domestic violence, health and the legal system. Since women comprise more than half of the world’s population, an understanding of their experiences, history, needs and abilities is an asset to students considering careers in such fields as education, social service, government, business, law, the ministry, journalism, health occupations and childcare.

Women’s Studies courses require college-level reading and writing skills.

All women’s studies courses meet AAOT (associate of arts, Oregon transfer degree) requirements. Women’s Studies (WS 101) may be taken for either arts and letters credit, or social science credit.

The Women’s Studies Focus Award at PCC prepares students for entry into Women’s Studies Programs at the bachelor’s degree level. In Oregon these programs can be found at Portland State University, University of Oregon, Oregon State University, and Lewis and Clark College. See the Course Description (WS prefix) section of this catalog for individual women’s studies courses and their prerequisites.

Students must complete 12 units of women’s studies courses to receive a focus award. Students who have completed the requirements for the Women’s Studies Focus Award should contact the Administrative Liaison to the Women’s Studies Focus Award at WomensStudies@pcc.edu or 971-722-4265 in order to receive this focus award. This office is located in the Division of English and Modern Languages at Sylvania Campus in CT 219.

Required Course
WS  101  Women's Studies     4

Plus an additional 8 credits of Women’s Studies courses selected from courses listed below.

Elective Courses
AD  103  Women and Addiction     3
ART  210  Women in Art     4
EC  216  Labor Markets; Economics of Gender and Work     4
ENG  222  Images of Women in Literature     4
ENG  260  Introduction to Women Writers     4
HE  212  Women's Health     4
HST  204  History of Women in the US: Pre-colonial to 1877     4
HST  205  History of Women in the US: 1877 - Present     4
HST  225  History of Women, Sex, and the Family     4
PSY  231  Human Sexuality     4
PSY  232  Human Sexuality     4
SOC  218  Sociology of Gender     4
SP  237  Gender and Communication     4
SPA  271A  Readings in Spanish Literature (Women Writers)     3
WS  201  Women of the World     4
WS  202  Women Working for Change     4

PREPARE FOR COLLEGE PROGRAMS

ADULT BASIC EDUCATION (ABE) AND GENERAL EDUCATIONAL DEVELOPMENT (GED)

Southeast Center
Mt. Tabor Hall (MTH), Room 128
971-722-6255

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7539

Sylvania Campus
Social Science Building (SS), Room 123
971-722-4741

www.pcc.edu/prepare/basic/

DESCRIPTION
A non-credit program for self-improvement designed to expand basic skills for students whose abilities range from under prepared to pre-college level. Development of reading, writing and math skills are emphasized, as well as life skills, employability, and technology. Students without a high school diploma also have the opportunity to prepare for the GED exams in five subject areas: writing, social studies, science, literature and math.

ABE classes are open to anyone 18 or over who wants to improve basic reading, writing and math skills at the pre-college level. Students who are 16 or 17 must first obtain an official release from high school before attending class. To enroll, individuals must attend a two-part Orientation and Placement session. The sessions for both day and evening classes are conducted on a regular basis each term. Students needing special assistance such as an interpreter, a reader or a writer to participate in the orientation program should contact the Disabilities Services (971-722-4341) at least two weeks before the session is held.
COURSE OF STUDY
Upon entering an ABE class, students’ reading, writing and math abilities are assessed and individual programs of study are developed to guide them toward their personal academic goals. Large group, small group and individualized instruction are used to maximize academic gains. To help with their studies, students may need to purchase books. Day and evening classes are offered at all campuses and at many other locations in the community.

COURSES
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABE 0741</td>
<td>ABE: Beginning Literacy</td>
</tr>
<tr>
<td>ABE 0744</td>
<td>ABE: Secondary, includes preparation for the GED test.</td>
</tr>
<tr>
<td>ABE 0782</td>
<td>Fundamentals of Math</td>
</tr>
<tr>
<td>ABE 0783</td>
<td>Fundamentals of Reading</td>
</tr>
<tr>
<td>ABE 0784</td>
<td>Fundamentals of Writing</td>
</tr>
</tbody>
</table>

THE GED STATE EXAMINATION
THE GED STATE EXAM BATTERY INCLUDES FIVE TESTS:
1. Writing skills: This test is divided into two sections. Part I measures sentence structure, usage and mechanics. Part II requires students to write an essay on a topic that adults would be expected to have general knowledge.
2. Social studies: Content includes history, economics, political science, geography and behavioral science. Reading skills assessed include comprehension, application, analysis and evaluation.
3. Science: Gauges knowledge on life science, biology and physical sciences, earth science, physics and chemistry. This test covers reading skills components including comprehension, application, analysis and evaluation.
4. Interpreting Literature and the Arts: Consists of popular literature, classical literature and commentary about literature and the arts. Reading skills assessed include comprehension, application and analysis.
5. Mathematics: Incorporates arithmetic (measurement, number relationships and data analysis), algebra and geometry. Skills that are tested are problem-solving abilities and higher level thinking skills.

DESCRIPTION
Programs in developmental education help students prepare for PCC academic and career technical programs and their chosen careers. Courses in this department include reading, writing and mathematics. Also available are support services including Learning Centers and tutoring.

Classes and services are offered at Cascade, Rock Creek, Southeast Center and Sylvania. For most developmental education courses, financial aid is available to those who qualify. For more information, contact the Financial Aid Office.

For accurate placement, students are required to take reading, writing and mathematics placement tests. For specific information, students should contact the nearest campus testing center.

LEARNING CENTERS
Developmental English and mathematics instruction are offered on an individualized basis through the Learning Centers at Rock Creek and Sylvania. Instruction is available by computer, videotape, lecture, self-paced format, tutoring and other teaching modes.

TUTORING
Free tutorial assistance is offered to students in many academic programs. Students may “drop-in” during any regularly scheduled tutoring time. For more information, contact the Learning Centers at Cascade, Rock Creek, Southeast Center or Sylvania.

TRANSFER COURSES
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.
RD 115, 116, 117

DEVELOPMENTAL ENGLISH
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.
ALC 50, 51, 52, 53
RD 80, 80A, 81A, 82A, 90, 90A, 91A, 92A, 95
WR 80, 80C, 90, 90C, 91, 91A, 92, 92A, 93

DEVELOPMENTAL MATHEMATICS
For developmental and/or pre-college Mathematics courses, see Mathematics, page 121. Consult the Course Descriptions section of the catalog for complete course titles and descriptions.

OTHER DEVELOPMENTAL EDUCATION COURSES
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.
DE 21, 31, 50

DEVELOPMENTAL EDUCATION
Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251
Southeast Center
Mt. Scott Hall (MSH), Room 103
971-722-6146
Rock Creek Campus
Building 2, Room 212
971-722-7414
Sylvania Campus
Social Science Building (SS), Room 215
971-722-4192
www.pcc.edu/prepare/developmental/
ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)

www.pcc.edu/esol

DESCRIPTION
The ESOL Program offers classes for people whose native language is not English. Reading, writing, listening and speaking skills are taught together in Levels 1-3. Separate skill classes in reading, writing and communication are taught in levels 4-8. American culture is stressed in all 8 levels.

ESOL classes are open to adult immigrants and refugees (including U.S. citizens), and international students and visitors who want to improve their English language proficiency. Testing and orientation are required before entering the program.

COURSE OF STUDY
The ESOL Department offers Basic ESOL (Levels 1-3), Transitional ESOL (Levels 4-5) and Academic ESOL (Levels 6-8). After Academic ESOL, students are ready for RD 115 and WR 115, after which students become eligible to take most college transfer-level classes.

ESOL Levels 1 - 8 serve the needs of adult refugees and immigrants. Levels 4 - 8 also serve the needs of professional personnel working or training in the U.S., international students and international visitors.

ESOL offers both credit and non-credit classes. Levels 1-3 are non-credit classes. Levels 4 and 5 can be taken either as non-credit or college credit classes. Levels 6-8 are credit classes.

Up to twenty-four credits of Level 7 and 8 ESOL courses may be applied to all PCC associate degrees. The cost of an ESOL class ranges from a moderate fee to full college tuition. Each class in Levels 1-3 is designed to take two or three terms to complete. Each class in Levels 4 - 8 is designed to be completed in one term. All new students must be tested prior to enrollment.

Students should contact the campus where they want to attend to find out about testing. International students should first contact an international student advisor at 971-722-5416 (CA), 971-722-6277 (SSB), 971-722-6155 (MTH), 971-722-7290 (RC) or 971-722-4473 (SY).

TESTING CENTERS
Cascade 971-722-5234
Sylvania 971-722-4533
Southeast 971-722-6277
Rock Creek 971-722-7300

Returning to the ESOL Program After One Year
If a student has been gone from the ESOL program for 1 year, then the student needs to retake the Compass ESL placement test and attend a placement/advising session before registering for any ESOL classes. If a student has taken the Compass ESL placement test but has not completed any ESOL classes during the past year, then the student will need to retake the Compass ESL placement test. A student may be able to successfully register online for an ESOL class, but if the student has been gone for 1 year, the student will not be allowed to remain in the ESOL class(es) until the student has retaken the Compass ESL placement test.

ADULT HIGH SCHOOL DIPLOMA

Cascade Campus
Student Services Building (SSB), Room 109
971-722-5416

Southeast Center
Mt. Tabor Hall (MTH), Room 152C
971-722-6155

Rock Creek Campus
Building 9, Room 102
971-722-7290

Sylvania Campus
College Center (CC), Room 216
971-722-4473

Students 16 years and older may complete college courses to complete requirements for the Adult High School Diploma at PCC. Students under the age of 16 who wish to be considered for enrollment in PCC classes must complete the “Underage Exception Process for Admission and Registration”. Previous high school credits from an accredited institution are evaluated and applied toward the diploma requirements. Students take college courses to complete their remaining high school requirements. The accumulated college credits may also be applied toward a college degree or certificate. The academic plan must be developed with the High School Completion Office at the PCC campus the student wishes to attend. For more information, contact the PCC Admissions Office of the campus where you intend to enroll.

HOW TO ENROLL
Prior to registration, students must:

1. Be at least 16 years old.
2. Have earned a minimum of 12 credits from an accredited high school or appropriate college work. Those with less than 12 credits may be admitted on a probationary status.
3. Provide PCC with an official copy of their high school transcript mailed or hand delivered in a sealed envelope to one of the campus offices above.
4. Apply for admissions and take the reading, writing and math placement tests.
5. Schedule an appointment with the campus high school completion specialist at one of the campus offices listed above to discuss transcript evaluation and placement test scores. At that time students will receive a copy of remaining graduation requirements.

GRADUATION REQUIREMENTS:

1. Please visit www.pcc.edu/prepare/hs-completion/.
2. Students must meet the college English and Mathematics competency requirements which are as follows:

Writing placement test less than three years old indicating placement at Writing 115 or completion of Writing 90 with a grade of C or better.

Reading placement test less than three years old indicating placement at Reading 115 or completion of Reading 90 with a grade of C or better.
Math placement test less than three years old indicating placement at Math 70 or higher, or completion of Math 65 with a grade of C or better.

3. Students must attend at least one complete term and satisfactorily pass a minimum of 6 college credits.

High school graduation petitions will remain valid for one calendar year.

**PCC PREP ALTERNATIVE PROGRAMS**

971-722-6213

[www.pcc.edu/pccprep](http://www.pcc.edu/pccprep)

PCC Prep Alternative Programs offer educational options to youth 16-20 years of age who are at risk of dropping out of school or those who have already left school without obtaining a high school diploma. Three programs offer a variety of options to give students a second chance at academic success.

In the Multicultural Academic Program (MAP) students with a first language other than English improve English skills in reading, writing, and speaking. As they gain confidence in their English abilities students can work toward a GED or high school diploma.

In Gateway to College students are given the opportunity to obtain a high school diploma while simultaneously earning college credits. Students start in small learning communities and develop academic and personal skills to help them become successful college students. This is a rigorous program that requires students to be focused and to be committed to their academic success in college.

The Youth Empowered to Succeed! (YES!) Program is for students interested in obtaining a GED. Students take classes specifically designed to prepare them to pass the GED tests. After completing their GED, YES! students may be eligible to apply to Gateway to College or receive a tuition waiver for one free term of classes at PCC.

In each program students receive the support of a Resource Specialist who acts as an instructor, advisor, and counselor. In all three programs, the cost of classes and books are covered. In Gateway to College, students are responsible for class fees each term.

See also Alternative Programs, High School Completion, English for Speakers of Other Languages and Developmental Education sections in this catalog for related instruction.

**PAVTEC**

Rock Creek Campus
Building 5, Room 116
971-722-7738

[www.pcc.edu/pavtec](http://www.pcc.edu/pavtec)

PAVTEC is an alliance of 11 school districts in Washington, East Columbia, and Multnomah counties along with business, labor and industry partners, other educational and governmental institutions. PAVTEC works with PCC and the other community college partners to bring about smooth transitions for our high schools students to assist in readying them for their next steps at PCC or for other training opportunities. PAVTEC works with Career and Technical Education (CTE) Programs of study and with all eligible secondary partners to offer articulated credit through the Dual Credit program at PAVTEC through PCC.

**VOLUNTEER LITERACY TUTORING**

Sylvania Campus
Social Science Building (SS), Room 03
971-722-4148

[www.pcc.edu/vlt](http://www.pcc.edu/vlt)

Volunteer tutors are available to help with basic skills in reading, writing, math and speaking English. Some tutors can also help with GED preparations. Tutorial services are available at all PCC locations in addition to a variety of other community sites in Washington County.

**WORKFORCE, ECONOMIC AND COMMUNITY DEVELOPMENT PROGRAMS**

**WORKFORCE DEVELOPMENT PROGRAMS**

WorkSource Portland Metro Tualatin
7995 SW Mohawk
503-612-4200

WorkSource Portland Metro Beaverton
241 SW Edgeway Drive
Beaverton, OR 97006
971-722-2700

WorkSource Portland Metro Central
30 N Webster Street, Suite E
503-280-6046

The WorkSource Centers provide a comprehensive menu of workforce services to job seekers and businesses. The Centers provide a range of educational, employment and business services through a collaboration of partners, including Worksystems Inc., the Oregon Employment Department and the Department of Human Services. The Workforce development programs offered through the Centers (and at a variety of other locations) include:

The Dislocated Workers Program (DWP), which helps people who have lost their jobs due to downsizing, layoffs, or plant closures.

- The Workforce Investment Act Adult Program, which provides services to unemployed or underemployed adults.
- The Steps to Success Program (STS), which provides services to individuals receiving public assistance.
- The Food Stamp Employment and Training Program, which provides services to individuals receiving food stamps.
- The Rapid Response Program, which begins working directly with employers and employees when a pending layoff or closure is announced to minimize the impact of job loss.
Through these programs the WorkSource Centers offer:

Services to job seekers including: a career center with computers, printers and fax machines for job searches; job listings; job search workshops; career counseling; assessment and testing; computer classes; Adult Basic Education; work experience opportunities, English as a Second Language classes; career technical training and post-employment training.

Services to businesses including: new employee recruitment; job applicant screening and referral; skill testing; customized pre-employment training; Jobs Plus training, rapid response and out placement services.

**MARGARET CARTER SKILL CENTER**

Cascade Campus
Technology Education Building (TEB), Room 124
971-722-5450

[www.pcc.edu/career/skill-center](http://www.pcc.edu/career/skill-center)

The Margaret Carter Skill Center is dedicated to helping individuals become productive and contributing members of the community. The program offers guidance and encourages students to become self-directed, self-reliant, and to achieve self-efficacy in a learning environment that is respectful, welcoming, tolerant, and non-judgemental. The program enables individuals to function effectively as independent decision makers, to be effective citizens in society, and to be productive employees in the workplace.

Students must be 18 or older, attend an orientation, and complete an initial assessment before attending classes.

Skill Center students study communication, math, principles of technology, computer applications, employment opportunities, and industry orientation. These are some examples of what students learn:

- Communication skills, workplace computational and analytic skills.
- Trades technology and industry specific procedures in an applied/lab environment.
- Computer skills to create applicable business documents and correspondence.
- Goal setting, workplace habits, employment expectations and critical job search skills

**EXCELLENCE IN TRADES APPRENTICESHIP PREPARATION**

Cascade Campus
Technology Education Building (TEB), Room 201
971-722-5744

[www.pcc.edu/etap](http://www.pcc.edu/etap)

The Excellence in Trades Apprenticeship Preparation (ETAP) program is a state certified pre-apprenticeship training program. ETAP provides the education needed to begin fulfilling career in the trades. ETAP training includes an in-depth introduction to construction apprenticeship through classroom instructions, hands-on training and field trips. ETAP is dedicated to increasing diversity in the trades industry. People of color, women, and public housing/low-income residents are encouraged to apply.

ETAP takes men and women from pre-apprenticeship level and provides a 10-week training in current trade skills. Upon graduation, students are prepared to begin working in the construction trades immediately.

The program offers:

- In-depth Training and College Credit: Students earn 200 hours of introductory-level construction training and earn eight PCC credits.
- Personal and Professional Development: ETAP workshops help students develop essential “soft” skills such as problem solving, time management, and team work.
- Peer Mentoring: First and second term apprentices are matched with journeypersons or late term apprentices working in the same trade.
- Job Resources: Students receive job placement and retention assistance for up to one year after graduation.
- Recognized Certification: ETAP is recognized by Bureau of Labor and Industries (BOLI) as well as trade unions and open shop apprenticeship programs.

**SMALL BUSINESS DEVELOPMENT CENTER (SBDC)**

971-722-5080
sbdc@pcc.edu

[www.pcc.edu/climb/small-business/](http://www.pcc.edu/climb/small-business/)
[www.bizcenter.org](http://www.bizcenter.org)

CLIMB’s Small Business Development Center (SBDC) is a hub of entrepreneur and economic development for small businesses throughout the PCC district. Utilizing a business development pathway model which guides the entrepreneur through the stages of business development – thinking, launching, growing, reinventing, and exiting – the SBDC challenges and inspires small business owners to grow healthy businesses; creating jobs, increasing sales and accessing capital.

The SBDC combines business education with ongoing business education advising to create an environment that supports small business owners in achieving their goals. Services include: business advising, directed self-study, entrepreneur development, small business management programs, and international trade advising and education.

**CAREER PATHWAYS PROGRAM**

971-722-6271

[www.pcc.edu/cp](http://www.pcc.edu/cp)

The Career Pathways Program connects students to short term intensive educational programs (3-9 months) that prepare students to gain employment in a chosen field and continue their education toward an advanced certificate and/or degree.

In addition to their job-specific education students will receive comprehensive career services including:

- A one-term career planning course
- Access to an internship in the student’s field of choice
- Company tours and presentations
- Personal career coaching services
• assistance identifying local companies with job openings
• help with completing applications, writing cover letters and resumes
• guidance on networking in person and via social media
• setting career goals and evaluating progress toward those goals

Pathways are available for students with a goal to upgrade their current skills or enter a new career field in areas such as health care, business services and trades. Several vocational trainings are also available for English language learners including health care and business services. Additional information can be found at www.pcc.edu/cp

COMMUNITY EDUCATION
971-722-6266
www.pcc.edu/community

PCC Community Education offers hundreds of noncredit life enriching classes that do not involve grades or exams. Classes are offered in five general areas: Creative Arts, Home and Garden, Language and Culture, Work and Life Balance and Recreation and Wellness. Whether it's honing a particular skill or hobby or exploring a wide range of new interests, Community Education classes are designed for adults and are typically offered during evenings or on weekends to accommodate busy personal schedules.

Courses are open to everyone sixteen years and older and feature local experts as instructors. Classes are offered at PCC campuses and centers, in neighborhood locations throughout the Portland metro area, and online at www.pcc.edu/online.

PCC Community Education also offers Continuing Education courses which offer busy professionals the quickest and surest route to maintaining and enhancing their professional certifications. Classes offer CEU that can be used for professional licensure renewal and preparation for taking the next step in an employee's career. Class formats feature in-person, hands-on learning opportunities from industry experts. Visit www.pcc.edu/career for more information.

Non-credit classes do not meet the federal requirements for financial aid and most Veteran's benefits, are not equivalent to credits and may not be used toward PCC certificates and degrees.

INTERNATIONAL PROGRAMS
International Customized Contract Training
971-722-2889

Portland Community College's International Contract Training Program (ICT) offers international business, industry and government traditional and customized training and educational services. ICT offers international organizations more than 60 traditional degree and certificate programs available through PCC as well as the option of customized training and educational services offered in the United States or abroad.

CLIMB CENTER FOR ADVANCEMENT

CLIMB CENTER FOR ADVANCEMENT

CLIMB Center
971-722-6888
climb@pcc.edu
www.pcc.edu/climb

CLIMB – Continuous Learning for Individuals, Management and Business – serves the needs of working professionals, individuals, managers, and businesses who want to accelerated, specialized, high-quality training.

The CLIMB Center for Advancement delivers the training and development programs backed by the experience and size of Portland Community College. With access to the resources of PCC, CLIMB is a hub of expertise, talent and training opportunities, using trainers who are industry experts and who bring real world experience to the classroom.

CLIMB PROFESSIONAL DEVELOPMENT AND TRAINING
971-722-6686
professional.training@pcc.edu
www.pcc.edu/climb/training

Professional Development and Training provides professional quality training and development services. These services help people and organizations reach their peak performance to maximize profitability and sustainability in the global marketplace.

Professional and Development and Training is the one source partner for responsive, relevant and results-oriented solutions in leadership, sales, communication, customer service, IT/software and trades. Programs are tailored to meet clients' needs and delivered at times and locations convenient to the client.

CLIMB FOR HEALTH CARE PROFESSIONALS
971-722-6653
www.pcc.edu/climb/health

The Institute for Health Care Professionals offers timely, relevant and innovative solutions for health care providers. Educational opportunities offered are: professional development/continuing education courses; certification/re-certification; entry level health care training; preparation for licensure; customized training; conference management services and American Heart Association (AHA) training through its AHA designated Community Training Center. Choose from traditional classroom format, customized on-site training or online education (both self-directed and interactive).

COMPUTER AND PROFESSIONAL EDUCATION PROGRAM
971-722-6200
www.pcc.edu/career/computer-education

As part of the PCC Business and Professional Development Center, the Computer Education Program (CEP) provides computer technology education and training to meet the specific needs of
today's workplace. Students can choose from application instruction, industry recognized IT certification programs and customized training. Courses are designed to empower adult learners to use computers and technology to meet business and professional goals.

**LIFE BY DESIGN NW**  
971-722-6650  
lifebydesign@pcc.edu  
www.pcc.edu/climb/life  

Life by Design NW redefines how to successfully navigate work-life transitions and meaningful retirement. Life by Design NW training programs and services address the needs of the changing workforce and provide opportunities for giving back to the community. Programs are targeted at the Boomer 50-plus population to include life and retirement planning, skills based volunteering, affinity group gatherings, and special events intended to empower people in finding their purpose and passion.

**DISTANCE EDUCATION**

www.distance.pcc.edu  

Distance education provides students an opportunity to earn college credit by participating in a variety of technology based courses. The content and transferability to four-year colleges is identical to the courses offered on campus. Students also follow the same admissions and registration procedures as on-campus students. Instead of attending on-campus classes, students participate in an orientation session online discussions and activities, complete readings in textbooks and study guides, take periodic exams and in some cases write papers or reports. Each course has an instructor for students to contact when they need assistance. Distance learning offers the following types of courses:

**WEB CLASSES**  

Web classes utilize Internet-based distance learning where students work independently through online coursework. Students and instructors interact through the Internet and e-mail, although some classes may require on-campus exams or labs. Students need to check the class schedule for specific computer and course requirements. Both credit and non-credit courses are available.

**TELECOURSES (TV)**  

Sylvania Campus  
TCB Building 116  
971-722-4730 or 971-722-4655  

Telecourses are credit courses delivered in video format providing the opportunity to take a campus-based course independently off campus through distance learning. Telecourses consist of a video series, textbook, study guide, pre-taped video lessons and an instructor to guide students through the course. Telecourses sometimes require an on-campus orientation and mid-term and final exams. Several viewing options are available for each Telecourse video series, including on-demand video streaming, cable TV broadcasts on Channel 27 (Comcast or Verizon FioS customers only), DVD/VHS purchase or rental (depending on availability), and on-campus library viewings.

**TELEWEB (TVWEB)**  

Sylvania Campus  
TCB Building 116  
971-722-4730 or 971-722-4655  

TeleWeb classes are a combination of Telecourses and Web courses. TeleWeb lessons are mainly delivered in video format, and course content also includes lessons, communication, quizzes, and other components that require Internet access and basic navigation abilities. Several viewing options are available for each Telecourse video series, including on-demand video streaming, cable TV broadcasts on Channel 27 (Comcast or Verizon FioS customers only), DVD/VHS purchase or rental (depending on availability), and on-campus library viewings.

**INTERACTIVE TELEVISION CLASSES (ITV)**  

Sylvania Campus  
TCB Building 116  
971-722-4405, 971-722-8585  

Interactive television classes are regular college courses delivered live from a PCC television classroom to receiving classrooms at Rock Creek, Sylvania, and Cascade campuses, and Southeast Center. Students taking interactive televised classes see the instructor on live television and are able to interact with the instructor and with students at other sites through special audio systems. ITV support is provided with initial classroom orientation.

**ACADEMIC REGULATIONS**

**GRADING GUIDELINES**  

**Roles and Responsibilities**  

1. Students shall be responsible for reading about and selecting a grading system option for each class they take at PCC as a condition of completing their registration for classes either on-line or in-person.  
2. Students shall be responsible for ensuring the accuracy of their final grades on their Academic Transcripts.  
3. Students shall be responsible for reading about and making any permitted changes to their grading system option selection subsequent to their registration.  
4. Students receiving financial aid should consult a Financial Aid Advisor prior to taking any steps described herein.  
5. Faculty inform students regarding their standing in class, existing petition processes for extraordinary situations, and refer students to other appropriate advisors for issues outside the classroom related to tuition, financial aid, and graduation.  
6. Faculty record earned grades for Students according to each Student's choice as described herein.  
7. Subject Area Committees may specify whether a specific grade system option is available for each course in its domain.

**Traditional Graded System**  

1. The traditional grade system uses A, B, C, D, and F, as defined under "Grade Definitions."  
2. If available, students may select this grade system option at registration or change to this grade system option at any time during the first 80% of a course's term by completing
the approved registration process.
3. Subject Area Committees may specify whether this grade system option is unavailable for each course in its control.
4. Degree or certificate requirements may only allow specific grade system options.

**Pass/No Pass System**
1. This grade system uses P and NP as defined under "Grade Definitions."
2. Transfer Students should be aware that four-year institutions limit the number of pass/no pass credits that may be applied to a degree and frequently recalculate the Student's grade point average by weighting each P as if it were a C or D and each P as if it were an F from the traditional graded system.
3. If available, students may select this grade system option at registration or change to this grade system option at any time during the first 80% of a course's term by completing the approved registration process.
4. Subject Area Committees (SACs) may specify whether this grade system option is unavailable for each course in its control.
5. Degree or certificate requirements may only allow specific grade system options.

**Attendance**
1. Students are expected to attend all classes in which they are enrolled.
2. Repeated absences will affect a student's grade.
3. Students are responsible for dropping or withdrawing from registered classes by completing the official drop/withdraw process.
4. Students who stop attending and who fail to drop or withdraw from a class by the published deadline may earn a grade of F or NP according to the grade system option selected by the Student.
5. Students having excessive absences and who fail to drop or withdraw from a class by the published deadline may earn a grade of F or NP according to the grade system option selected by the Student.
6. Faculty must record the last date attended for students that earn an F or NP.
7. Faculty may assign a mark of NS (see "Marks") and deny access to students who do not attend the first class session. These Students will be dropped by Registration.
8. Faculty may assign a mark of NS (see "Marks") and deny access to Students who do not attend by the published drop deadline. These Students will be dropped by Registration.
9. Students who fail to attend or stop attending classes and fail to drop those classes by the published drop deadline will be responsible for the associated tuition and fees.

**Grade Definitions**

**A Superior**
1. Honor grade indicating excellence.
2. Earned as a result of a combination of some or all of the following as outlined by the Instructor in the course handout: high examination scores, accurate and prompt completion of assignments, ability to deal resourcefully with abstract ideas, commendable mastery of pertinent skills, and excellent attendance.
3. Probable success in a field relating to the subject or probable continued success in sequential courses.

**B Above average**
1. Honor grade indicating competence.
2. Earned as a result of a combination of some or all of the following as outlined by the Instructor in the course handout: high examination scores, accurate and prompt completion of assignments, ability to deal well with abstract ideas, commendable mastery of pertinent skills, and excellent attendance.
3. Probable continued success in sequential courses.

**C Average**
1. Standard college grade indicating successful performance earned as a result of a combination of some or all of the following as outlined by the Instructor in the course handout: satisfactory examination scores, generally accurate and prompt completion of assignments, ability to deal with abstract ideas, fair mastery of pertinent skills, and regular attendance.
2. Sufficient evidence of ability to warrant entering sequential courses.

**D Substandard but receiving credit**
1. Substandard grade indicating the Student has met only minimum requirements as outlined by the Instructor in the course handout.
2. Earned as a result of some or all of the following: low examination scores, generally inaccurate, incomplete or late assignments, inadequate grasp of abstract ideas, barely acceptable mastery of pertinent skills, irregular attendance, insufficient evidence of ability to make advisable the enrollment in sequential courses.
3. Does not satisfy requirements for entry into courses where prerequisites are specified.

**F Failure**
1. Non-passing grade indicating failure to meet minimum requirements as defined by the instructor in the course handout earned as a result of some or all of the following: non-passing examination scores, inaccurate, incomplete or late assignments, failure to cope with abstract ideas, inadequate mastery of pertinent skills, and repeated absence from class.
2. Does not satisfy requirements for entry into courses where prerequisites are specified.
3. Faculty must record the last date attended for students that earn an F.

**P Pass**
2. A grade of P represents satisfactory achievement which would have been graded C or better under the traditional grading system.
3. The P grade is disregarded in the computation of the PCC grade point average.
4. This grade is available only when a student has selected the pass/no pass grade system option during the first 80% of a course's term.

**NP No Pass**
1. Unacceptable performance.
2. A grade of NP represents unsatisfactory achievement which would have been graded D or lower under the traditional grading system.
3. The NP grade is disregarded in the computation of the grade point average.
4. Faculty must record the last date attended for students that earn an NP.
5. This grade is available only when a student has selected the pass/no pass grade system option during the first 80% of a course's term.

Mark Definitions

SC Satisfactory Completion
The mark used when a student satisfactorily completes continuing education units (CEUs).

NSC Not satisfactory completion
The mark used when a Student does not satisfactorily complete continuing education units (CEUs).

I Incomplete
1. At the time final course grades are recorded, the instructor may, with the consent of the student, record an “I” mark and grant additional time for the completion of a minor but essential requirement for the student who is otherwise making satisfactory progress.
2. This shall only be done by signed written agreement with a requesting student and a copy shall be left on file with the division administrative staff.
3. Such written agreements shall describe the missing requirement, the basis for the requirement's evaluation, the affect on the final grade computation and the completion date (within one year) for that requirement.
4. If no replacement grade for an “I” mark shall have been provided by the course Instructor within one calendar year, the “I” mark shall automatically be changed to and “F” or “NP” depending on the grade system option (chosen by the student) in affect at the time the “I” mark was originally recorded.
5. This mark does not entitle the student to repeat a course without paying tuition.
6. It may be impossible to receive this mark in some courses where, for example, equipment usage is required.

W Withdrawal
1. This mark is to be used only by the Student Records Office when a Student has completed the official withdraw process after the published drop deadline and before the published withdraw deadline.

CIPR Course in Progress, Re-Register
1. A mark used only for designated classes.
2. To receive credit, Students must re-register because equipment usage is required.
3. This may include courses in modular or self-paced programs.
4. This mark may also be used in a skills based course to indicate that the Student has not attained the skills required to advance to the next level.
5. If the course is not completed within a year, the CIPR changes to an AUD (Audit) on the transcript unless the course was repeated and a grade earned.

CIP Course in Progress
1. A mark used only for designated classes in modular or self-paced programs that do not conform to the normal academic calendar.

2. If the course is not completed within a year, the CIP changes to a F or NP (No Pass) (based on the Student's prior grade option choice) on the transcript unless the course was repeated and a grade earned.
3. A Student does not need to re-register for the course.

AUD Audit
1. This mark may be used only by Registration.
2. The AUD mark, when allowed, permits a Student to attend a course without receiving a grade or credit for the course even though tuition and fees must be paid.
3. To be assigned an AUD mark, a Student must obtain permission from their Instructor and notify Registration prior to the published drop deadlines.
4. Subject Area Committees may specify whether this mark is available for each course in its control.
5. Does not satisfy requirements for entry into courses where prerequisites are specified.

NS No Show
1. This mark is assigned by faculty before the published drop deadlines to indicate that a student has never attended class. These students will be dropped by registration.
2. If Faculty fail to assign and NS mark to Students who never attend class and if those Students fail to drop or withdraw before the published deadlines then they will earn a grade of F or NP according to the grade system option selected by the student at registration.

R Repeated
1. This mark may be used only by Registration. See “Repeated Courses.”

Transcript Miscellany

Repeated Courses
1. All grades earned will appear on the transcript.
2. The most recent grade earned for a course will be calculated into the GPA and the total credits earned; all other grades earned for that course will be excluded from the GPA and the credits earned. If a course can be taken more than once for credit, the oldest grade for that course will be excluded only when the repeat limit is exceeded.

Computing Grade Point Averages
1. Grade points are computed on the basis of four points for each credit of A, three points for each credit of B, two points for each credit of C, one point for each credit of D, and zero points for each credit of F.
2. Grades of P and NP and marks of SC, NSC, I, W, X (no longer available for use), CIP, CIPR, R, NS, and AUD are disregarded in the computation of the grade point average.
3. The grade point average is the quotient of the total points divided by the total credits in which A, B, C, D, and F are received.

Grade Changes
1. All grade change requests must be submitted by the instructor within one year of the end of the course, including grade changes made as a result of resolving a disputed grade.
2. If a grade dispute cannot be resolved with the Instructor, the Student may follow the student grievance or complaint process.
3. If the Instructor is no longer employed by PCC and, following a good faith effort to contact the Instructor, the Instructor is not available for consultation, grades can be made by appropriate Division Dean providing there is sufficient evidence to make the change.

Withdrawal
1. Prior to the published drop deadlines, students shall be able to drop any registered class by completing the official drop/withdraw process.
2. Such action by the student shall result in no charges for the course or courses (or reimbursement if charges have already been paid); the course or courses shall be removed from their transcript.
3. Students shall be able to withdraw from any registered class by completing the official drop/withdraw process before the published withdraw deadline.
4. This action shall result in a grade of W appearing for the course or courses on the transcript.
5. Students must withdraw before the published withdraw deadline or a grade will be assigned by the instructor.

Time periods referring to “published drop deadlines” and published withdraw deadlines” are different for each term.

STANDARDS FOR SATISFACTORY ACADEMIC PROGRESS

Portland Community College is open to any citizen of the PCC district who can benefit from the instruction offered. Students who are not making satisfactory progress will be provided with counseling, academic advising, and instruction. These services will be aimed at maximizing opportunities for students to benefit from their learning experience at PCC. The Academic Standards of Satisfactory Academic Progress Policy pertains to currently enrolled degree seeking students who have declared a major.

Any individual may be denied admission or continued admission if the appropriate college procedure indicates that the individual cannot benefit from the instruction desired. The procedure may be based on, but is not limited to, an evaluation of educational experiences, work history or appropriate testing.

ACADEMIC STANDARDS AND SATISFACTORY ACADEMIC PROGRESS

Levels of Academic Standing

Good Standing
Students are expected to meet this minimum level of academic progress.

1. Maintain a cumulative Grade Point Average (GPA) of 2.0 or higher
2. Successfully complete 2/3 (66.67%) of attempted credits each term

Academic Warning
This is the level occurring the term after you do not meet standards.

- You will receive an email notifying you of your Academic Warning status.

- Read this email carefully and follow directions to access resources.

Good Standing can be regained the following term if standards are met.

Academic Probation
This level is reached after a term on Academic Warning if you fail again to meet the standards.

- A hold will be placed on your account preventing you from registering for the next term.
- You will receive an email notifying you of your Academic Probation status.
- You will be instructed to work with your academic advisor or counselor to develop a Learning Contract.
- You must work with your instructors to obtain a mid-term progress report that will be shared with your advisor or counselor.

Good Standing can be regained the following term if standards are met.

Academic Suspension
Academic Suspension occurs if you fail to meet standards for a third term in a row.

- If you have already enrolled for classes for the next term, you will be automatically dropped.
- You will receive an email and written letter notifying you of your Academic Suspension status.
- You will be suspended from PCC for one term.
- If you wish to return to PCC you must:
  - Complete the Re-Entry Process, or
  - Appeal for Exception due to extenuating circumstances.

For details about implications of not meeting satisfactory academic progress, appeals for exception and the re-entry process, please visit www.pcc.edu/resources/student-records/academic-progress/academic-standards.html.

TRANSFER CREDIT STANDARDS

Credits from other institutions may be accepted toward degree requirements if they were completed at a regionally accredited college or university.

For degree-seeking students the college evaluates coursework for all Lower Division Collegiate (LDC) classes from regionally accredited institutions where grades of A, B, C, or P/S (Pass/Satisfactory) were earned. P/S grades are only transferable if the transferring institution awarded that grade for C or higher. If a D was considered P/S, it is not transferable. If you are unsure what constitutes LDC coursework see the appropriate section of the catalog. Career Technical Education coursework may be applied to a degree or certificate upon the evaluation and approval of the department chair. This typically happens when a student submits and application for graduation. Students should consult with the department chair of the appropriate program for assistance. PCC may accept up to 16 credits of 300-400 level transfer coursework, provided it is equivalent to courses offered at PCC. Upper-division
transfer coursework is evaluated at the request of the student or by Graduation staff if needed to satisfy graduation requirements. Only subject areas taught at PCC will be evaluated. Transfer GPA is not included in the overall GPA on PCC transcripts.

For non-degree seeking students the college evaluates all coursework needed to satisfy PCC’s Standard Prerequisites, as well as commonly used preparatory coursework in other subject areas (e.g. Biology). Non-degree seeking students will not receive any notification when this occurs, as the majority of their transfer coursework will not be evaluated.

To request evaluation of your transfer credits, complete and submit the transfer credit evaluation request which can be found on MyPCC. You must be a current credit PCC student to request a transfer credit evaluation. Submit this request after you have requested official transcripts from all schools where you have transfer coursework. Transfer evaluations are performed in the order in which they are received.

All transcripts received by the Student Records Office become the property of PCC. The Student Records Office will not provide copies of transcripts from other institutions. The Student Records Office is responsible for determining acceptance of transfer work to meet college requirements. Students should plan to meet with a department chair or advisor to review program requirements.

In order to receive credit toward a Portland Community College certificate or degree, it is the responsibility of each student with transcripts (credits) from international schools to have them translated (if necessary) and evaluated course by course by a service that is a member of the National Association of Credential Evaluation Services. Further information can be found at: www.naces.org by clicking on “Current Members” for a listing of service providers.

Students using any type of Federal Veterans Administration (VA) Education Benefit are required to have all prior credit history evaluated. It is the student’s responsibility to request official transcripts from all previous colleges and submit them to the PCC Student Records Office. Students must also complete and submit the Transfer Credit Evaluation request found on MyPCC. A student’s first term of VA benefits may be certified while awaiting for transcript evaluation, however no subsequent terms will be certified for VA Benefits until transfer credit evaluation is complete. All credits will be evaluated and transferred according to the policies stated in this catalog.

Student Records
Portland Community College
P.O. Box 19000
Portland, Oregon 97280

NON-TRADITIONAL CREDIT

In all cases of non-traditional credit, a student must have an established PCC transcript before the credit can be recorded. Non-traditional credit may not be used to establish the residency requirement. Students must submit a Non-Traditional Credit form to the Student Records Office and pay the non-refundable fee. The Non-Traditional Credit form can be found on the Student Records website or picked up at the Student Records Office. After evaluation the non-traditional credit will be recorded on the student’s transcript. A maximum of 45 credits may be recorded through this process.

PCC will evaluate any of the following learning experiences for credit: Advanced Placement, College Level Entrance Examination Program (CLEP), Military Service Credit and coursework at non-accredited institutions. Students may submit a Non-Traditional Credit form based on previous course work in order to:

1. Substitute course work to meet General Education requirements, AP and CLEP only.
2. Substitute course work to meet degree and/or certificate requirements. Petitions are submitted to the Student Records Office.

No student may graduate with less than the required number of credits. Credit may be given for equal course work, but it may not be waived.

ADVANCED PLACEMENT (AP)

Students who have taken college level courses in high school under the Advanced Placement Program maybe eligible to receive college credit pending official copies of test results. Credit awarded will vary based on scores received. A list of AP exams accepted by PCC and credit received is available on the Student Records website: www.pcc.edu/resources/student-records/advanced-placement.html

To request a copy of AP exam scores to be sent to PCC, contact the Advanced Placement Program. This information can be found at the address listed below or the following website: www.collegeboard.com/student/testing/ap/exgrd_rep.html.

Advanced Placement Program
PO Box 6671
Princeton, NJ 08541-6671
1-888-225-5427

INTERNATIONAL BACCALAUREATE (IB)

Students who complete International Baccalaureate (IB) Exams may be eligible to receive college credit based on the exam score. Students must have an official IB transcript sent to Student Records, along with a Non-Traditional Credit form. A list of IB exams accepted by PCC and credit received is available at www.pcc.edu/resources/student-records/ib.html.

Students may request official IB transcripts by contacting:

IB Americas Global Centre
Attn: Transcript Officer
7501 Wisconsin Avenue, Suite 200 West
Bethesda, MD 20814
USA
e-mail: ibid@ibo.org
phone: 301-202-3025

For more information on ordering transcripts please see the International Baccalaureate website: www.ibo.org/iba/transcripts/.

COLLEGE LEVEL ENTRANCE EXAMINATION PROGRAM (CLEP)

Students enrolled at PCC may receive credit for certain college courses by submitting official scores from the College Level Entrance Examination Program (CLEP). PCC accepts CLEP scores for some, but not all, subject areas. A list of exams accepted by PCC and credit received is available on the PCC Student Records website: www.pcc.edu/resources/student-records/credit-acceptance.html
HONOR RECOGNITION

HONOR ROLL
The College will recognize academic excellence in degree seeking students who have earned a 3.25 or higher GPA in a given term on a minimum of six graded credits, excluding "P" (Pass) in a given term. The following honors will be awarded:

- Honor's List: 3.25–3.49 each term
- Dean's List: 3.50–3.74 each term
- President's List: 3.75–4.00 each term
- Highest Honors: 3.75–4.00 PCC cumulative average awarded upon graduation.

PHI THETA KAPPA
Phi Theta Kappa is an honorary society designed for students in two-year colleges who have established a 3.5 or higher grade point average. Membership forms are available through the Associated Students of PCC (ASPCC).

www.pcc.edu/resources/phi-theta-kappa/

HONOR SOCIETIES

INSTITUTIONS

COURSE WORK AT NON-ACCREDITED INSTITUTIONS

Credit may be granted for course work completed at training sites other than those listed in the “Transfer Credit Practices Directory” published by the American Association of Collegiate Registrars and Admissions Officers. Examples include hospitals, banks, corporations, business schools, etc.

Students must furnish detailed training records, course outlines and, whenever possible, transcripts. Individual departments will evaluate and assign PCC equivalencies. A maximum of 45 credits may be recorded through this process. Only those subject areas taught by PCC will be considered. Contact the Student Records Office for details. Course work evaluated from non-accredited institutions is not generally acceptable in meeting the requirements for an AAOT degree.

COURSE CHALLENGE

Some courses offered at Portland Community College may be challenged. Course challenge is used when a student believes that he/she satisfies the course content and outcome objectives by other means. Course Challenge credit may not be used to meet the college residency requirement. No more than 25 percent of required degree or certificate credits can be met through course challenge.

Students who wish to challenge a course must accept the conditions as outlined in the course challenge policy which can be found at www.pcc.edu/resources/academic/standards-practices/student-records/documents/coursechallenge.html.
• The right to consent to disclosure of personally identifiable information contained in the student's education records, except for when consent is not required by FERPA. FERPA does not require a student's consent when disclosure is to other school officials with legitimate educational interests. A school official is a person employed by the college in an administrative, supervisory, academic or research, or support staff position; a person or company with whom the college has contracted or appointed as its agent; or a student serving on an official committee or assisting another school official in performing the official's tasks. A school official has a legitimate educational interest if the official needs to review an educational 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 requirements of FERPA.

Note: PCC does not have any directory information. Therefore, all information about a student is kept confidential and not released without express written consent of the student (except when consent is not required by FERPA).

Questions about these policies can be directed to the College Registrar and the Student Records Office at 971-722-7100

BUCKLEY AMENDMENT

The Family Educational Rights and Privacy Act of 1974 (Statute: 20 U.S.C. 1232g; Regulations: 34CFR Part 99) also known as the Buckley Amendment is a Federal Law which states (a) that a written institutional policy must be established and (b) that a statement of adopted procedures covering the privacy rights of students be made available. The law provides that the institution will maintain the confidentiality of student education records. Certain directory information is excluded from this law and may be disclosed at the discretion of the college.

SOLOMON ACT

Federal law requires PCC to provide student name, address and telephone number to the military for recruiting purposes.

COMMUNICATION POLICY (MyPCC AND PCC E-MAIL)

Portland Community College will use electronic communication methods to conduct official and legal college business. Communication to PCC employees and students via electronic communication methods will speed the delivery of information. Every student and employee is given the appropriate account(s) to access these communications. Recipients will be expected to read all electronic communication related to PCC business and when necessary take action as a result of communications received from the College. It is expected that students and employees will monitor their college electronic accounts often to receive the most up-to-date information from the College.

STUDENT RIGHTS AND RESPONSIBILITIES

The PCC Student Rights and Responsibilities Handbook supersedes all previous student handbooks and student grievance procedures and applies to all conduct and activities. The information in the Handbook shall be made available to all students in the PCC College Catalog. A copy of the Handbook is available on the PCC website at www.pcc.edu, and in printed form in the Offices of the Deans of Student Development.

The Handbook is not a contract between a student and PCC, and PCC reserves the right to modify or revise the contents of this handbook at any time. Occasionally revisions may be made to the Handbook. The most current version is available online at www.pcc.edu/about/policy/student-rights/. The Handbook is to be construed in a manner that is consistent with other College policies and regulations.

COLLEGE/STUDENT RESPONSIBILITIES

Portland Community College provides students with broad, comprehensive programs of general education, developmental/remedial programs, and vocational/technical curricula. The College also provides cultural, recreational, and community service activities.

It is, in turn, the responsibility of the student to observe campus rules and regulations and to help maintain appropriate conditions in the classroom, on the campus, and in the community.

A student's registration obligates him/her to comply with the policies and regulations of the College. PCC will restrict a student's admission to or registration with the College and will withhold degrees and academic transcripts as prescribed by the College and/or state guidelines if a student fails to meet financial obligations to the College or other legal reasons.

Portland Community College is granted the right by law to adopt such rules as are deemed necessary to govern its operations.

STUDENT RIGHTS

RIGHT TO PARTICIPATE IN FORMULATING POLICIES AND RULES PERTAINING TO STUDENT CONDUCT

Students have the right to participate in formulating and reviewing policies and rules pertaining to student conduct and, to the extent permitted by law and as provided by this handbook, in the enforcement of all such rules.

RIGHT TO FREEDOM FROM HARASSMENT AND DISCRIMINATION

Portland Community College does not tolerate unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, marital status, height/weight ratio, disability, veteran status, age, or sexual orientation in any area, activity or operation of the District. In addition, the college complies with the Civil Rights Act of 1964 (as amended), related Executive Orders 11246 and 11375, Title IX of the Education Amendments Act of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, USERRA – Uniformed Services Employment and Reemployment Rights Act, and all civil rights laws of the City of Portland and the
State of Oregon. Accordingly, equal opportunity for employment, admission, and participation in the college's benefit and services shall be extended to all persons, and the college shall promote equal opportunity and treatment through a positive and continuing affirmative action plan.

Therefore, it is the responsibility of every member of the College community to strictly comply with the policy. This includes notifying each employee/student of his or her rights and responsibilities under PCC's Non-harassment Policy. Management staff will be held accountable for taking reasonable action to maintain work sections and educational environments free of conduct that causes, or reasonably could be considered to cause, intimidation, hostility, or discrimination.

Any person who believes he or she has been discriminated against or harassed by a College employee, representative or student is encouraged to file a complaint through the Affirmative Action Office, SSB 301 Cascade, 503-978-5840, or online at http://www.pcc.edu/about/affirmative-action/Nonharassment.html. Non-affirmative action complaints are to be filed in accordance with the Student Grievance Procedure or Complaint Form.

RIGHT TO PROTECTION OF FREEDOM OF EXPRESSION

Students shall be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study in which they are enrolled.

As constituents of the academic community, PCC students shall be free, individually and collectively, to express their views on issues of institutional policy and procedures which shall include the examination and discussion of issues of interest to them and expression of opinions both publicly and privately. They shall be free to invite and to hear persons of their choosing and to support causes by orderly means that do not substantially disrupt the regular and essential operations of the College.

Demonstrations are a legitimate mode of expression, whether politically motivated or directed against the college administration, and will not be prohibited. Demonstrators, however, have no right to deprive others of the opportunity to speak or be heard, take hostages, physically obstruct the movement of others, or otherwise substantially disrupt educational or institutional processes in a way that interferes with the safety or freedom of others. Students may be subject to disciplinary action when their acts or actions cause, or are likely to, or do cause substantial disruption or interference with the regular and essential operation of the College.

RIGHT TO PROTECTION FROM IMPROPER ACADEMIC EVALUATION AND IMPROPER DISCLOSURE OF STUDENTS’ VIEWS, BELIEFS, ASSOCIATIONS

Student academic performance shall be evaluated solely on an academic basis (which may include attendance and the ability to apply skills), not on the student's opinions or conduct in matters unrelated to academic standards. The course syllabus shall contain and articulate the evaluation standards and grading criteria by which student performance is measured. Students shall have the right to grieve their academic evaluation under the Grievance Procedure only if the student believes that these standards and criteria were not followed by the instructor, or were not fairly and consistently applied to all students.

At the same time, students are responsible for meeting standards of academic performance established for each course in which they are enrolled.

Information about student views, beliefs, and political associations which staff members acquire in the course of their association with students is considered confidential.

RIGHT OF ACCESS TO, AND PROTECTION FROM IMPROPER DISCLOSURE OF, STUDENT RECORDS

To minimize the risk of improper disclosure, academic and disciplinary records shall remain separate. Transcripts of academic records shall contain only information about academic status.

Information from disciplinary or counseling files shall not be available to unauthorized persons on campus or to individuals off-campus without the written consent of the student involved, except under legal compulsion, in cases where the safety of persons or property is involved, or other disclosures that comply with the Family Educational Rights and Privacy Act, Board Policy, and Oregon laws pertaining to education records.

In order to assist students to benefit from courses, programs, and activities, the College provides limited guidance and counseling services which students are encouraged to make use of on a voluntary basis. The confidentiality of student record information obtained by counseling and advising services will be strictly maintained, except when PCC is legally permitted to disclose student record information.

RIGHT TO FORM STUDENT ORGANIZATIONS

Students may form student clubs and organizations under the provisions of the ASPCC constitution and campus by-laws. Any chartered student club or officially recognized student organization acting through the Associated Students of Portland Community College may invite any person of their own choosing to the campus, provided the invitation and arrangements are in compliance with established policies of the College.

College procedures must be followed to ensure orderly scheduling of facilities, adequate preparation for the event, and that activities are conducted in a manner appropriate for an academic community.

RIGHT TO SELL AND DISTRIBUTE MATERIALS AND ENGAGE IN FUND-RAISING ACTIVITIES

Students have the right to engage in legal incidental sales of personal property in private transactions. PCC has not designated any facilities for this purpose, however, except for the use of designated College bulletin boards.

All fund-raising activities for ASPCC must be approved by the Campus Student Leadership Coordinator.

All merchandise, periodicals, magazines, and books offered for commercial sale may be sold only through the College bookstores or College food services except when within district policy and approved by the Campus President or designee.

All free publications not in violation of state laws, federal laws, and/or College rules, such as books, magazines, newspapers, handbills, leaflets, and similar materials may be distributed on campus. Any persons desiring to distribute publications shall first register with the Campus President or designee on the campus at which
distribution is contemplated so that reasonable areas and times can be assured and the activities of the College will not be interfered with.

All handbills, leaflets, newspapers, and similar materials must bear the name and address of the organization and/or individual distributing the materials.

Printed materials shall not be placed on any vehicle parked on campus.

RIGHT TO ACCESS COLLEGE FACILITIES

Students have the right of access to College facilities, subject to ordinary schedules and policies and regulations governing the use of each facility. When using these facilities, the student has the responsibility to respect these regulations and to comply with the spirit and intent of the rules governing facility use. Chartered ASPCC student clubs have free access to facilities unless additional services (custodial, Campus Safety, etc.) are required.

When faced with a situation which he/she determines is likely to or does disrupt the order of the College, threatens the health and welfare of the college community, or that interferes with the ingress and/or egress of persons from college facilities, the Campus President or designee shall have the authority to:

1. Prohibit the entry of any person or persons, or to withdraw the license or privilege of any person or group of persons to enter or remain upon any portion of a college facility; or

2. Give notice against trespass by any manner specified by law to any person, persons, or group of persons against whom the license or privilege has been withdrawn or who have been prohibited from entering into or remaining within a college facility.

Any student(s) disobeying a directive given by the Campus President or designee, pursuant to the statements above, shall be subject to disciplinary action, and/or criminal trespass laws.

CODE OF STUDENT CONDUCT

GENERAL POLICIES

Admission to Portland Community College carries with it the presumption that the student will conduct him/herself as a responsible member of the college community. Thus, when a student is admitted to and/or enrolled at Portland Community College, the student likewise assumes the obligation to observe standards of conduct which are appropriate to the pursuit of educational goals.

Students shall generally have an opportunity to participate in the formulation of policies and rules pertaining to student conduct and, to the extent legally permitted, in the enforcement of such rules. PCC administration and its Board, however, retain the authority to create and enact College policy.

Programs based on contracts with government agencies or external funding sources operated outside of the comprehensive campuses may adopt separate conduct procedures consistent with Portland Community College’s Code of Student Conduct, the program’s goals, and the principle of due process for all parties.

Portland Community College may take appropriate disciplinary action when student conduct deemed by the Dean of Student Development or designee to be disruptive to the operation of the College, or constitutes one or more of the behaviors identified below.

VIOLATIONS

Disciplinary action may result from the commission of any of the actions listed herein, or any violation of civil or criminal law while on College property or while engaged in any College activity.

1. Academic cheating or plagiarism or aiding or abetting cheating or plagiarism, which may also result in academic penalties under the College’s Academic Integrity Policy.

2. Furnishing false information to the college with the intent to deceive the College or any person or agency.

3. Forgery, alteration, or misuse of college documents, records or identification cards whether in written or electronic form.

4. Unauthorized use or access of college electronic communications media, equipment, files, or data, or failure to comply with the “PCC Technical Terms of Usage Policy”: www.pcc.edu/library/policies/aup.htm

5. Abuse, harassment, intimidation, or threats by any means toward a student, staff member, vendor, visitor, or invited guest of the college.

6. Malicious destruction, damage, or misuse of college or private property.

7. Theft or conversion of college property.

8. Failure to comply with the College’s Service and Assistance Animal Guidelines: www.pcc.edu/resources/disability/policies/service-animals.html

9. Failure to comply with the lawful directions of college personnel acting in performance of their duties.

10. Unwanted contact or communication of any nature with another student or a staff member after being advised by a college official or the other student that such contact or communication is unwelcome.

11. Any behavior that is disruptive to the educational or administrative processes of the College as determined by a college official.

12. Interference by force or by violence (or by threat of force or violence) with any administrator, faculty or staff member, or student at the College who is in the discharge or conduct of his/her duties or studies.

13. Possession, consumption, being under the influence, or furnishing of alcoholic beverages (as identified by federal or state law) on college-owned or controlled property or at college or student organization supervised functions, except as provided by rules and procedures of the Portland Community College Board of Directors.

14. Possession, consumption, being under the influence, or furnishing of any narcotic or dangerous drug, as defined by ORS 475 and ORS 167.203 to 167.252 [as now law or hereinafter amended], except when use or possession is lawfully prescribed by an authorized medical doctor or dentist.

15. Failure to disperse when an assembly is ordered to disperse by college officials.

16. Failure to comply with a notice against trespass.
17. Failure to comply with the following rules regarding firearms and weapons:
   a. The use, carrying, exhibiting, or displaying of any weapon (as defined by Oregon Revised Statute 161.015), or facsimiles thereof, is prohibited on or in college facilities, except as provided by Oregon law or when approved by College administration for official College activities.
   b. Explosives, incendiary devices, or any facsimiles thereof are prohibited on or in college facilities, except as provided by Oregon law, or when approved by college administration for official College activities.
   c. The above rules do not apply to equipment or materials owned, used, or maintained by the College, used by the College or under college direction, nor to law enforcement officers or campus security personnel.

18. Violations of published college regulations, including those related to entry and use of college facilities, the rules in this Section, and any other college regulations which may be enacted.

19. Conduct that substantially interferes with the College’s educational responsibility of ensuring the opportunity for all members of the college community to attain their educational objectives, or the college’s subsidiary responsibilities, which may include, but are not limited to: record-keeping, providing miscellaneous services, and sponsoring out-of-class activities, such as lectures, concerts, athletic events, and social functions.

If a student is charged or convicted of an off-campus violation of the law, the matter shall be no cause for disciplinary action by the College unless there is a reasonable possibility, as determined by the Dean of Student Development or designee, that the behavior is substantially likely to disrupt the educational process of the College.

SANCTIONS

The District Board has directed the College President, pursuant to ORS 341.290, to establish administrative rules to govern the College and its students, and to administer disciplinary action. Board Policy B213

Each faculty member is responsible for class conduct and is authorized to take such steps as are necessary when behavior of a student interrupts the normal class procedure. When behavior is so serious as to result in expulsion from the class, the faculty member may remove the student from one class session or the equivalent. For non-classroom environments, conduct violation will be handled expeditiously. Violations may also require a conference among the student, the instructor and/or Division Dean to identify and set conditions for his/her return to the class. Permanent removal of a student from a class or classes may only be imposed by the Dean of Student Development or designee pursuant to the provisions of the Code of Student Conduct.

The Dean of Student Development or designee may impose the following sanctions for violations of the Code of Student Conduct:

1. Expulsion from Portland Community College (i.e., permanent removal of the privilege to attend Portland Community College);
2. Suspension from Portland Community College for a definite period of time and/or pending the satisfaction of conditions for re-admission, (i.e., suspension of the privilege to attend Portland Community College);
3. Removal from class(es) for which the student is currently registered;
4. Restitution for damages;
5. A specified period of college and/or community service;
6. Disciplinary probation with or without the loss of privileges for a definite period of time. The violation of the terms of the disciplinary probation or the breaking of any College rule during the probation period may be grounds for suspension or expulsion from the College;
7. Disciplinary admonition and warning;
8. Any other sanction the College deems educationally appropriate.

The parents or guardian of any student under 16 years of age who receives a sanction under the Code of Student Conduct shall be notified.

DISCIPLINARY DUE PROCESS HEARING PROCEDURES

In keeping with the educational purposes of the College, disciplinary actions other than those requiring expulsion are intended to be remedial rather than punitive. Often disciplinary proceedings will be conducted informally between the student(s) and the Dean of Student Development or designee.

1. Students in violation of institutional regulations or civil or criminal law shall be so informed.
2. During investigation of the charges, the status of the student shall not be altered nor shall his/her right to be present on the campus and to attend classes be suspended except for reasons related to the safety and well-being of students, faculty, staff, or college property, or which relate to or interfere with the orderly operation of the College, as determined by the Dean of Student Development or designee.
3. The student has the right to appeal any disciplinary (as distinct from academic) action to the Campus President or designee solely on the basis of alleged procedural violation(s). If a violation is found to have occurred, the Campus President or designee will remand the case to the Dean of Student Development or designee for reprocessing.

No disciplinary sanction shall be imposed unless the student has been notified of the charges against him/her and the nature and source of the evidence. In cases in which the College does not intend to suspend or expel a student, the source of information may be kept confidential if, in the discretion of the Dean or his/her designee, he/she believes that revealing the source would create a risk of physical or emotional harm to the source, or might otherwise have a chilling effect on enforcement of these rules. A student subject to these sanctions will be allowed to present his/her case to an appropriate college official and to have an advisor of his/her choice present. Advisors are not permitted to present the case but may advise the student.
Both the College and the student may seek legal advice at their own expense, but, to avoid an adversarial situation, neither the College nor the student will be represented by a lawyer during any meeting or hearing involving the College and the student. The student may withdraw from college of his/her own volition at any time during the disciplinary process. Disciplinary sanctions may still be assessed, however, if the student withdraws from the College prior to the completion of the disciplinary process, or elects not to participate in disciplinary proceeding.

In cases that are not resolved informally, the Dean of Student Development or designee shall use the following hearing procedure:

Step 1: At an initial conference with the Dean of Student Development or designee, the student will be informed verbally and in writing of the charges and the maximum penalty which might result from consideration of the disciplinary matter. The College retains the right, upon learning new information and giving notice to the student, to revise the proposed maximum penalty.

Step 2: The student must submit all of his/her evidence within 7 calendar days of the initial conference.

Step 3: After considering the evidence in the case and interviewing persons as appropriate, the Dean of Student Development, or designee, may take one of the following actions:

a. Terminate the proceedings, exonerating the student.

b. Dismiss the case after appropriate counseling and advice.

c. Impose an appropriate sanction as described above.

The student will be notified in writing of the decision of the Dean of Student Development or designee. If the student decides to appeal the decision on the basis of alleged violation of due process, he or she may do so by filing a written appeal with the Campus President or designee within 7 calendar days of the decision. The Campus President or designee shall render a decision regarding the appeal the decision on the basis of alleged violation of due process. The College retains the right, upon learning new information and giving notice to the student, to revise the proposed maximum penalty.

READMISSION AFTER SUSPENSION
A student suspended from the College may be readmitted only on written petition to the campus Dean of Student Development or designee. Petitions must, if applicable, indicate how specific rein-statement conditions have been met and reasons which support re-consideration. The Dean of Student Development or designee shall convey his/her decision in writing to the student; and in the case of non-readmission, shall express his/her reasons in writing. The decision of the Dean of Student Development or designee is final.

RECORDS
Records of all disciplinary actions shall be kept by the campus Dean of Student Development in accordance with the state archival policies.

ACADEMIC INTEGRITY POLICY

INTRODUCTION
Students of Portland Community College are expected to behave as responsible members of the college community and to be honest and ethical in their academic work. PCC strives to provide students with the knowledge, skills, judgment, and wisdom they need to function in society as educated adults. To falsify or fabricate the results of one's research; to present the words, ideas, data, or work of another as one's own; or to cheat on an examination corrupts the essential process of higher education.

GUIDELINES FOR ACADEMIC INTEGRITY
Students assume full responsibility for the content and integrity of the coursework they submit. The following are guidelines to assist students in observing academic integrity:

- Students must do their own work and submit only their own work on examinations, reports, and projects, unless otherwise permitted by the instructor. Students are encouraged to contact their instructor about appropriate citation guidelines.
- Students may benefit from working in groups. They may collaborate or cooperate with other students on graded assignments or examinations as directed by the instructor.
- Students must follow all written and/or verbal instructions given by instructors or designated college representatives prior to taking examinations, placement assessments, tests, quizzes, and evaluations.
- Students are responsible for adhering to course requirements as specified by the instructor in the course syllabus.

FORMS OF ACADEMIC DISHONESTY
Actions constituting violations of academic integrity include, but are not limited to, the following:

Plagiarism: the use of another's words, ideas, data, or product without appropriate acknowledgment, such as copying another's work, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

Cheating: the use or attempted use of unauthorized materials, information, or study aids; or an act of deceit by which a student attempts to misrepresent academic skills or knowledge; unauthorized copying or collaboration.

Fabrication: intentional misrepresentation or invention of any information, such as falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

Collusion: assisting another to commit an act of academic dishonesty, such as paying or bribing someone to acquire a test or assignment, taking a test or doing an assignment for someone else, or allowing someone to do these things for one's own benefit.

Academic Misconduct: the intentional violation of college policies, such as tampering with grades, misrepresenting one's identity, or taking part in obtaining or distributing any part of a test or any information about the test.

PENALTIES FOR ACADEMIC DISHONESTY
If a student is found guilty of violating academic integrity, any one or a combination of the following penalties may be imposed by the faculty member:

- Verbal or written warning
- A grade of “F” or “NP” for the assignment, project, or examination
The following penalty may be imposed by the faculty member only after a hearing conducted by the division dean:

- A grade of “F” or “NP” for the course, overriding a student withdrawal from the course.

The Dean of Student Development may also issue the following disciplinary sanctions, in accordance with the Code of Student Conduct:

- Disciplinary admonition and warning.
- Disciplinary probation with or without the loss of privileges for a definite period of time. The violation of the terms of the disciplinary probation or the breaking of any college rule during the probation period may be grounds for suspension or expulsion from the college.
- Suspension from Portland Community College for a definite period of time. (i.e., suspension of the privilege to attend Portland Community College).
- Expulsion from Portland Community College (i.e., removal of the privilege to attend Portland Community College).

ACADEMIC DISHONESTY COMPLAINT AND HEARING PROCEDURES

1. The faculty member observing or investigating the apparent act of academic dishonesty documents the commission of the act, usually by writing down the time, date, place, and a description of the act.

2. The faculty member collects evidence, often by photocopying the plagiarized assignment and creating a paper trail of all that occurs after the alleged act of academic dishonesty. Often the evidence will include various samples of the student's work showing a radical disparity in style or ability.

3. The faculty member provides the student an opportunity to explain the incident.

4. The faculty member explains to the student the procedures and penalties for academic dishonesty and gives the student a copy of the Portland Community College Academic Integrity Policy.

5. The faculty member may resolve the matter informally by determining an appropriate course of action, which may include a verbal or written warning, or a grade of “F” or “NP” on an assignment, project, or examination, or no further action. If the accused student contests the faculty member's decision, a hearing with the division dean may be requested in writing within 10 days of the time the student is notified of the faculty member's decision. A hearing requested by a student under this section is informally conducted by the division dean, who may take steps he or she deems appropriate to resolve the conflict.

6. If the faculty member wishes to initiate further action (e.g., assign a lower grade or a grade of “F” or “NP” for the course), the student is entitled to a hearing with the division dean. The faculty member submits a copy of the Academic Dishonesty Report form and any additional evidence to the division dean within 10 days of the alleged act of academic dishonesty, which initiates the hearing process.

7. Within 10 days of receiving an Academic Dishonesty Report form, the division dean notifies all parties in writing of the date, time and location of the hearing. At the hearing, the faculty member and division dean present charges and allow the student to present his/her side of the case. The student may bring an advisor, who may advise the student but not present the case. If the student misses the hearing, the faculty member and division dean may proceed with the process to completion. The division dean will consider any evidence submitted within seven days of the hearing, and interview persons as warranted. The division dean determines if the action recommended by the faculty member is appropriate.

8. Within 10 days of the hearing, the division dean sends written notification of the results to the student and faculty member.

9. Within 10 days of the notification, the student may submit a written appeal to the dean of instruction. The decision of the dean of instruction is final.

10. The division dean sends a final report to the dean of student development. The dean of student development may also issue the following disciplinary sanctions, in accordance with the Code of Student Conduct:

- Disciplinary admonition and warning.
- Disciplinary probation with or without the loss of privileges for a definite period of time. The violation of the terms of the disciplinary probation or the breaking of any college rule during the probation period may be grounds for suspension or expulsion from the college.
- Suspension from Portland Community College for a definite period of time. (i.e., suspension of the privilege to attend Portland Community College).
- Expulsion from Portland Community College (i.e., removal of the privilege to attend Portland Community College).

SOURCES

With permission, contents of this policy were adapted from “Academic Honesty” and “Academic Dishonesty,” Oregon State University, Corvallis, Oregon; and “Student Rights and Responsibilities: Scholastic Ethics Code,” Pima Community College, Tucson, Arizona.

GRIEVANCE PROCEDURE INTRODUCTION

Students enrolled at Portland Community College may use the Grievance Procedure to challenge decisions and/or actions taken by college faculty and staff that are alleged to violate their rights as defined in the Student Rights Section of the Student Rights and Responsibilities Handbook. This procedure does not apply to any other dispute.

The student will be allowed to have an advocate of his/her choice (such as a PCC counselor or advisor, or student government representative) present in meetings throughout the grievance process. Advocates are not permitted to present the case, but may advise the student. Both the college and the student may seek legal advice at their own expense; however, neither the college nor the student shall be represented by a lawyer during any grievance meeting or hearing involving the college and the student.

Programs based on contracts with government agencies or ex-
GRIEVANCE PROCEDURE

STEP 1: COMMUNICATE WITH THE FACULTY/STAFF MEMBER:

a. Academic Grievances: The student must directly communicate with the faculty/staff member involved within 30 calendar days of the event that is the subject of the grievance. Otherwise the student forfeits the right to grieve the issue. The student is encouraged to put the grievance in writing, including a specific description of the problem, the reasons the student believes his/her rights have been violated as defined in the Student Rights Section of the Student Rights and Responsibilities Handbook, and a proposed remedy.

b. Harassment or Discrimination Grievances: If the grievance involves harassment or discrimination by a college staff member or student, the student should be directed to the College’s Affirmative Action Officer. Complaint Forms are available at any campus ASPCC Office, Information and Admissions Office.

STEP 2: SUBMIT A GRIEVANCE FORM TO THE DEAN OF STUDENT DEVELOPMENT:

a. In cases where the problem is not resolved through direct communication with the faculty/staff member involved, the student will submit a Grievance Form, with supporting evidence, to the campus Dean of Student Development or designee within 14 calendar days of the communication with the faculty/staff member. The Dean of Student Development or designee will review the grievance and refer it to the appropriate Administrator. Grievance Forms are available at campus ASPCC and Dean of Student Development Offices and online at www.pcc.edu.

b. Within 14 calendar days, the Administrator will objectively investigate the grievance, consult and share appropriate information with all involved parties, consider relevant evidence, and render a decision in writing to the student and the campus Dean of Student Development.

STEP 3: APPEAL TO DEAN OF INSTRUCTION OR DEAN OF STUDENT DEVELOPMENT

a. The student may appeal the decision in Step 2 if (1) PCC procedures were not followed or (2) there is relevant evidence that was not available during Step 2. An appeal must be made within 14 calendar days to the campus Dean of Instruction for academic evaluation grievances, or to the campus Dean of Student Development for other grievances as defined in the Student Rights Section of the Student Rights and Responsibilities Handbook. The student must submit written justification for further review and provide evidence that there are grounds for the appeal.

b. The Dean will objectively investigate how the grievance process was conducted in Step 2, consult with all involved parties, consider relevant evidence that was not available or not considered during Step 2, and render a decision in writing. The decision will be final and not subject to appeal.

REPORTING, RECORDING, AND MAINTAINING RECORDS

When the grievance is concluded, all documentation shall be forwarded to the campus Dean of Student Development, who will maintain them in accordance with the state archival policies.

CONSENSUAL RELATIONSHIP STATEMENT

Portland Community College’s mission is to offer an atmosphere that encourages the full realization of each individual’s potential. This mission is promoted by professionalism in the relationships that faculty and staff have with students. These relationships are intended to foster free and open exchange of ideas, productive learning, and the work that supports it.

In addition, those who supervise or evaluate the work of students must be perceived to be making their decisions fairly and without favoritism. This mission is potentially jeopardized when faculty/staff enter into consensual romantic relationships with their students.

Faculty and staff are cautioned that consensual romantic relationships with their students can prove to be unwise and problematic, and should be avoided. When consensual romantic relationships occur, questions of fairness, favoritism, and coercion arise:

- Relationships in which one party is in a position to review the work, or influence the career of the other may provide grounds for complaint when that relationship appears to give undue access or advantage, restricts opportunities, or creates a hostile and unacceptable environment for others.
- Such relationships may undermine the real or perceived integrity of the supervision provided, and the particular trust inherent in the student-faculty relationship.
- Such relationships may, moreover, be less consensual than the individual whose position confers power believes. The relationship is likely to be perceived in different ways by each of the parties to it, especially in retrospect. While some relationships may begin and remain harmonious, they are susceptible to being characterized as unprofessional and disrespectful to others.

Therefore, faculty/staff should not engage in consensual romantic relationships with their current students.

If a faculty or staff member has a pre-existing consensual romantic/sexual relationship with a student, the student should be discouraged from enrolling in courses taught by the instructor or
entering into work situations in which she/he would be supervised by the staff member. If the student does enroll in the course or work for the staff member, the faculty/staff member should remove him/herself from academic or professional decisions concerning the student.

Should a romantic/sexual relationship between a faculty/staff member and his/her student lead to a sexual harassment charge, the College is obligated to investigate and resolve the charge in accordance with the complaint procedure in the Non-harassment Policy.

CHILDREN ON PCC PROPERTIES

Children are welcome on Portland Community College campuses and properties in appropriate situations and while actively supervised by a parent, guardian, or responsible adult. This policy outlines the College’s approach to ensuring that reasonable steps are taken to protect the study and work environment of the College, and the health, safety, and liability issues associated with children on PCC properties.

SCOPE

This policy applies to minor children under the age of 16 who are not officially enrolled in classes or employed by the College. This policy does not apply to organized activities such as attending a registered child care facility, after school care activities, school field trips, and approved programs including, but not limited to, athletic events, theater productions, art programs, and other events targeted to children.

Students under the age of 16 who are officially enrolled, and for whom an authorized Underage Release form is on file with the Admissions Office, have the same rights, responsibilities and privileges of any other student in the classroom and on college properties.

APPLICATION

The College seeks to provide an environment which is conducive to study and work. Children must be actively supervised by their parent, guardian, or responsible adult at all times when they are on college properties.

College staff, faculty and administrators have the responsibility to direct the removal of a child in accordance with section 3.6 of this policy.

Due to safety and liability issues, except as otherwise defined in this policy, under no circumstances may unsupervised children be on college properties, including playing, roaming, and occupying campus grounds or buildings.

Any college employee who finds an unaccompanied child on college properties should inform Public Safety of the location of the child.

RESTRICTED AREAS

Children cannot be allowed in areas where their presence is disruptive or where health, safety, and liability risks are identified. Areas in which children are NOT permitted include:

- Testing centers
- Classrooms (when the Instructor determines that the presence of children would be unsuitable)
- Laboratories and laboratory preparation areas
- Scientific, technical and maintenance work spaces
- Fine or performing arts work spaces or studios
- Areas that contain hazardous chemicals, machinery or equipment
- Commercial kitchens and other food preparation areas
- Fitness centers

Other areas may be identified as unsuitable for children as a result of a risk assessment and supervisors of the respective areas are required to inform staff and students of requirements or restrictions.

PCC TRANSPORTATION SERVICES

When children are passengers in any PCC vehicle, including shuttle buses, the operators of these vehicles are not responsible for ensuring that child passengers meet child safety requirements. It is the responsibility of the care provider to ensure that any child accompanying them meet the child safety requirements. Where safety restraints are not available, the care provider will ensure the child is properly seated to minimize possible accident or injury. Failure to conform to these guidelines will result in child and care provider being denied transport (as applicable to ORS 811.210).

RESPONSIBILITY OF THE COLLEGE

- To provide an environment conducive to study and work for all students, staff and visitors.
- To provide a healthy and safe study and work environment for all students, staff and visitors and to comply with legislative requirements.
- To take reasonable steps to assist students, staff and visitors who may have special needs to enable access to facilities and services.

RESPONSIBILITIES OF PEOPLE BRINGING CHILDREN INTO THE COLLEGE

- To take reasonable steps to safeguard the health and safety of the children in their care while on college properties.
- To consider the potential risk to the health and safety of others that may come with bringing children into the College environment and to take reasonable steps to safeguard against those risks.
- To be responsible for the behavior of the children in their care, so as not to disrupt, inconvenience or endanger staff, students or other visitors.

RESPONSIBILITIES OF PCC STAFF AND INSTRUCTORS:

To direct removal of a child in accordance with this policy if:

- The child’s health or safety is at risk;
- The child is presenting a health, safety or liability risk to property or others;
• The child’s behavior is causing undue disruption to the work of students or staff; or
• The presence of a child is unsuitable.

Instructors are responsible to direct the removal of children from their classroom. In the case of public areas, any member of staff on duty has the authority to direct that children be removed from the area.

Students who wish to appeal a specific situation, or who fail to comply, may follow the Code of Student Conduct hearing process as outlined in the PCC Student Rights and Responsibilities Handbook.

STUDENT PROFILE

Portland Community College served a total of 92,537 students through credit and noncredit instruction 2010-2011. The following reflect characteristics of students enrolled fall 2011.

<table>
<thead>
<tr>
<th></th>
<th>Credit</th>
<th>Non-Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age</td>
<td>29 years</td>
<td>39 years</td>
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<tr>
<td>Female</td>
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<tr>
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<tr>
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<td>6.7%</td>
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<td>1.0%</td>
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<td>1.7%</td>
</tr>
<tr>
<td>Multi-Racial</td>
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</tr>
</tbody>
</table>

STUDENTS RIGHT TO KNOW

In the fall term of 2008, 1,327 first time, full time, certificate or degree seeking students entered PCC. After three years, 14% of the students had graduated from PCC and 22% had transferred to other higher education institutions.

EQUAL OPPORTUNITY STATEMENT

NONDISCRIMINATION

Portland Community College does not discriminate on the basis of race, color, religion, national origin, sex, veteran status, age, or disability. The college complies with the Civil Right Act of 1964 (as amended), related Executive Orders 11246 and 11375, Title IX of the Education Amendments Act of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veteran's Readjustment Act of 1974 and all civil rights laws of the City of Portland and the State of Oregon. Accordingly, equal opportunity for employment, admission, and participation in the college’s benefit and services shall be extended to all persons, and the college shall promote equal opportunity and treatment through a positive and continuing affirmative action plan.

Unlawful discrimination by race, color, religion, age, sex, national origin, marital status, physical or mental disability, creed, sexual orientation, height/weight ratio, organizational affiliation, or political affiliation shall not exist in any area, activity or operation of the district.

Interim Director, Affirmative Action:
Dr. Claire Oliveros
722 SW 2nd 3rd floor Rooms 300 and 301
971-722-5841
971-722-5464 TTY

District Section 504 Coordinator:
Maria Mendez, CA SSB 300, 971-722-5851

Title IX Coordinator & Title IX Athletics Coordinator
Dick Magruder, CA PE 101, 971-722-5513

PCC CORE OUTCOMES

GRADUATES OF PORTLAND COMMUNITY COLLEGE SHOULD BE COMPETENT IN:

COMMUNICATION

Communicate effectively by determining the purpose, audience and context of communication, and respond to feedback to improve clarity, coherence and effectiveness in workplace, community and academic pursuits.

COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY

Apply scientific, cultural and political perspectives to natural and social systems and use an understanding of social change and social action to address the consequences of local and global human activity.

CRITICAL THINKING AND PROBLEM SOLVING

Identify and investigate problems, evaluate information and its sources, and use appropriate methods of reasoning to develop creative and practical solutions to personal, professional and community issues.

CULTURAL AWARENESS

Use an understanding of the variations in human culture, perspectives and forms of expression to constructively address issues that arise out of cultural differences in the workplace and community.

PROFESSIONAL COMPETENCE

Demonstrate and apply the knowledge, skills and attitudes necessary to enter and succeed in a defined profession or advanced academic program.

SELF-REFLECTION

Assess, examine and reflect on one’s own academic skill, professional competence and personal beliefs and how these impact others.

Core Outcomes mapping:
www.pcc.edu/resources/academic/core-outcomes/
PORTLAND COMMUNITY COLLEGE

Portland Community College is the largest institution of higher learning in Oregon, serving more than 1,430,900 residents in a five-county, 1,500 square-mile area in northwest Oregon. The district includes the state’s largest city, Portland, and the most rapidly growing population areas in the state. PCC enrolls close to 92,537 full- and part-time students annually, or one in 16 residents.

The PCC board of Directors consists of seven members elected by zones to four-year terms. The board members govern the college, which includes selecting the president, approving the hiring of other staff and faculty, approving the college budget and establishing policies that govern the operation of the college.

COLLEGE HISTORY

Portland Community College began as the adult education program of the Portland Public Schools. On May 15, 1961, the school district established the college as a separately operating entity. Because the college included students from many areas outside the Portland school district, in 1965 the school board appointed an advisory council to supervise the college and to give representation to areas beyond the school district boundaries.

As the advisory council and the school board developed programs and plans for the rapidly growing college, it became evident that the college needed to be a separate governmental unit with its own elected board to represent the areas from which students came. In 1968, voters of the five-county area approved the formation of a new college district named the “Metropolitan Area Education District.” It included the school districts of Portland, Sauvie Island and Riverdale in Multnomah County; Lake Oswego in Clackamas County; St. Helens, Scappoose and Vernonia school districts in Columbia County; Newberg school district in Yamhill County and all of Washington County.

At this time the voters also elected the first college board of directors and approved a tax base, providing the college with funds for the local share of operation and building construction. In 1971, the name of the district was changed to “Portland Community College District.”

District residents showed continuing support for their college in 1980, and again in 1986 as they voted to increase the PCC tax base. Enrollment growth of 25 percent since 1986 led voters to approve a $61.4 million bond measure in 1992 to expand facilities at all campuses, and repair and upgrade existing buildings. In 2000, voters approved another bond measure for $144 million.

As a result of the bond measure, the college opened new buildings at all three comprehensive campuses in 2003 and 2004, and unveiled the new Southeast Center on SE 82nd and Division in 2004. Preston Pulliams was hired as PCC’s fifth president in 2004. Pulliams joined colleges and universities from around the country in signing a national climate initiative that launched PCC’s climate action plan to reduce the college’s carbon footprint.

In 2008, area voters approved a $374 million bond measure—the largest ever in the state of Oregon—to improve technology, meet workforce demand needs and address rising enrollment. Willow Creek Center was the first building constructed as a result of this bond planning and work began all across the district in 2010-2011.

The Newberg Center opened in the fall of 2011, providing Yamhill County with a 12,000 square-foot education and community space. It is recognized as one of the most sustainable educational buildings in the nation, with solar panels, natural cooling and heating systems, and natural lighting. During the 2011-2012 school year, PCC celebrated its 50th year of serving local communities, with celebrations across the district, recognition of 50 distinguished alumni and 50,000 hours of community service work. In 2012, SolarCity built the state’s largest solar array on the Rock Creek Campus, which powers Building 9.

PCC CAMPUSES

The college has three comprehensive campuses which provide lower-division college transfer courses, two-year associate degree programs and career/technical training programs. The Extended Learning Campus provides adult basic education, job training and retraining, small business development and life enrichment courses for residents in more than 200 district locations. Campuses and centers are strategically located throughout the district to be within easy access of residents.

Cascade Campus
Cascade Campus is located in the urban heart of the city of Portland and serves about 21,000 students each year. Its neighborhood is diverse, lively and close-knit. The campus offers a full array of educational offerings, including the first two years of the university courses where students can earn an associate degree and 27 career/technical degree and certificate offerings.

Cascade Campus
Campus President: Algie Gatewood
705 N Killingsworth Street
Portland, OR 97217
www.pcc.edu/cascade

PCC’s Cascade Campus is located in the urban heart of the city of Portland and serves about 21,000 students each year. Its neighborhood is diverse, lively and close-knit. The campus offers a full array of educational offerings, including the first two years of the university courses where students can earn an associate degree and 27 career/technical degree and certificate offerings.

Rock Creek Campus
Campus President: David Rule
17705 NW Springville Road
Portland, OR 97229-1744
www.pcc.edu/rockcreek

While Rock Creek has a Portland address, it sits about 12 miles west of downtown in the rapidly growing Beaverton-Hillsboro area of Washington County. The 256-acre campus provides a beautiful setting for both college transfer and career/technical programs and annually serves 18,700 students. The campus provides a model for partnerships with area high schools. A new Science and Technology building houses classroom and laboratory instruction.

Sylvania Campus
Sylvania Campus provides adult basic education, job training and retraining, small business development and life enrichment programs and career/technical training programs. The Extended Learning Campus provides adult basic education, job training and retraining, small business development and life enrichment courses for residents in more than 200 district locations. Campuses and centers are strategically located throughout the district to be within easy access of residents.

Sylvania Campus
Campus President: Linda Gerber
12000 SW 49th Avenue
Portland, OR 97219-7132
www.pcc.edu/sylvania

Sylvania is located in suburban Southwest Portland between Lake Oswego, Tigard and downtown Portland. It is the largest campus, serving more than 26,700 students annually and is home for numerous PCC programs. Sylvania provides college transfer, career/technical and developmental education. The library and theater facilities are a focal point of the campus.
Extended Learning Campus

Campus President: Jessica Howard

PCC’s Extended Learning Campus (ELC) serves students district-wide by offering a wide variety of programs at locations throughout the PCC service district. The programs include credit transfer programs, Workforce Training and Development, Adult Basic Skills, English for Speakers of Other Languages (ESOL), Community Education, Career Pathways and alternative high school programs. The ELC has six main sites:

Southeast Center
2305 SE 82nd Avenue
Portland, OR 97216

www.pcc.edu/southeast

The center serves as the hub for all Extended Learning Campus programs. Students at this site can complete the first year of a college transfer degree and courses range from art, history, writing and math, to business administration, economics and general science. Career technical programs in Management and Supervisory Development and Occupational Skills are also offered. Other programs include alternative high school programs, Gateway to College, Adult Basic Skills (ABE, GED, ESL) and the Regional Dislocated Workers Program.

A variety of Community Education activities and courses take place in the dance studio, fitness center, ceramics studio and photography darkroom.

CLIMB Center for Advancement
1626 SE Water Avenue
Portland, OR 97214-3336

www.pcc.edu/climb

The CLIMB Center for Advancement, formerly known as the Central Portland Workforce Training Center, is a 31,000-square-foot facility near OMSI in central eastside Portland. CLIMB, which stands for Continuous Learning for Individuals, Management and Business, offers continuing education and professional training for health professionals, small business owners, managers and work teams. The center provides access to a broad range of training areas and facilities that meet the latest in industry standards and technical capabilities.

Willow Creek Center
241 SW Edgeway Drive
Beaverton, OR 97006

www.pcc.edu/willowcreek

The Willow Creek Center (near 185th and Baseline Road) in Washington County was opened at the end of 2009 as part of the college’s 2008 bond measure and special funding from the state. Located on TriMet’s blue MAX line, the 100,000 square-foot educational center serves as a one-stop for the unemployed and under-employed, and houses programs from the old Washington County Workforce Training Center and partner agencies. Programming at the site includes GED classes, certified nursing assistant training, medical assisting and emergency medical services. Its cornerstone is the acclaimed Washington County Workforce Development. Established in 1995, it provides the training and employment services for unemployed workers.

Portland Metropolitan Workforce Training Center
5600 NE 42nd Avenue
Portland, OR 97218

www.pcc.edu/metro

The Portland Metropolitan Workforce Training Center is located in urban northeast Portland and primarily houses Workforce Network, a department of professionals committed to finding solutions to optimize workforce performance. Workforce Network specializes in helping businesses meet human resources needs and job seekers with career development.

The programs of Workforce Network including Steps to Success, Dislocated Worker and Metro One Stop, provide a comprehensive array of employment and training. Instruction is available in Adult Basic Education, English for Speakers of Other Languages, job readiness preparation, job development, short-term training, internships, alcohol and drug/mental health assessment, and referral and computer education. The center also provides Gateway to College and Community Education classes.

Hillsboro Education Center
775 SE Baseline Street
Hillsboro, OR 97123

www.pcc.edu/hillsboro

Located in downtown Hillsboro, the center houses four classrooms with state-of-the-art audio/visual equipment and a 30-station computer lab. Classes are offered mornings, afternoons, evenings and Saturdays. A variety of transfer courses are offered along with classes in computers and graphic design. Pre-college reading, writing and math are also offered. English for Speakers of Other Languages (ESOL) classes are scheduled year round. Academic advising and placement testing are available during normal business hours.

Newberg Center
135 Werth Boulevard
Newberg, OR 97132

www.pcc.edu/newberg

Portland Community College’s 16-acre location on the corner of Brutscher Street and Fernwood Road just off of Highway 99W is the site of a new educational facility for residents of Newberg and surrounding areas. Built with funds from the 2008 bond measure, the educational facility is approximately 12,000 square feet, with room to expand in the future. Sustainability is integral to the design of PCC’s new center, which includes five classrooms, a conference room, administrative space and a reception area.

PCC CONTRACTED EDUCATIONAL SERVICE DISTRICTS

Tillamook Bay Community College
2510 First Avenue
Tillamook, OR 97141
503-842-8222

Columbia Gorge Community College
400 E Scenic Drive
The Dalles, OR 97058
541-506-6010 ext. 6010
ACCREDITATION
Portland Community College is accredited by the Northwest Commission on Colleges and Universities, the accrediting agency for this region. Many programs within the college have accreditation from professional associations. Documents describing Portland Community College’s accreditation and licensing are available for review in the college library or in the Office of the Vice President for Academic and Student Affairs. Information regarding accreditation from professional associations may be obtained by contacting the department chairperson of the individual program.

MISSION STATEMENT
Portland Community College advances the region’s long-term vitality by delivering accessible, quality education to support the academic, professional, and personal development of the diverse students and communities we serve.

To fulfill its mission, the college focuses on these core themes:
• Access and diversity
• Student success
• Quality education
• Economic development and sustainability

THE PCC FOUNDATION
971-722-4382
“WHERE OPPORTUNITY HAPPENS”
The PCC Foundation makes opportunity happen. As the only non-profit organization dedicated to supporting PCC, the Foundation helps students access education by awarding scholarships and providing vital educational opportunities for our community. To learn more, go to www.pcc.edu/foundation.

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Ron Wilkinson
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** A number below 100 indicates a support course and a number above 9000 indicates a vocational supplementary course. These courses are not usually transferable. PCC is committed to offering instruction providing students with the opportunity for self-improvement, entry level employment skills and to complete the first two years of a baccalaureate degree.
AB 280B Cooperative Education: Auto Body Repair - Seminar  Provides opportunity to share work experiences and receive feedback from students and instructors. Corequisite: AB 280A.

**AB 100 - Auto Body Basic Skills - 12.00**
Introduces oxy-acetylene welding, use of hand tools, equipment, and procedures in replacing and aligning auto body components including the use of MIG welders in auto body repair. Develops skills in repair of auto body metals. Discusses damage analysis and how dents are reshaped to original contours.

**AB 105 Frame Analysis & Repair 12.00**
Covers structural misalignment analysis, use of measuring systems, structural repair procedures, and wheel alignment. Prerequisites: AB 100.

**AB 106 Panel Repair 12.00**
Develops skills in repair of practice panels, school owned vehicles, and customer cars. Safe use of grinders, Sanders, assorted hand tools, and pulling equipment will be applied and practiced. Paint fundamentals, preparation, and application will be discussed. Prerequisites: AB 100.

**AB 280A Cooperative Education: Auto Body Repair**
Focuses on demonstrating knowledge of auto body repair. Observe and obtain hands-on experience matching their learning objectives. Credits are determined by total clock hours spent on site during the term. Must be coordinated with supervisor, instructor and cooperative education specialist. Prerequisite: AB 205.

**AB 101 Alcohol Use and Addiction 3.00**
Basic overview of addiction with emphasis on alcohol addiction. Considers physiology, psychology, treatment, prevention, recovery and relapse. Required for students wishing to enter the Alcohol and Drug Counselor Program. Audit available.

**AB 102 Drug Use and Addiction 3.00**
Considers current drug use and psychological/behavioral aspects of client misuse or addiction. Includes drug chemistry, physiological effects of drug use upon the body and specific treatment formats and techniques. Audit available.

**AB 103 Women and Addiction 3.00**
Investigates patterns of alcohol and drug use and abuse by women in our society. Explores models of treatment and recovery specific to the needs of women and the relationship of substance abuse to social issues. Audit available.

**AB 104 Multicultural Counseling 3.00**
Focuses on diversity of populations using addiction counseling services and counseling. Emphasizes developing sensitivity to relevant cultural differences and building skills in addressing them. Audit available.

**AB 105 Aging & Addiction 3.00**
Covers drug and alcohol addiction among older adults, including prescription and other drugs and alcohol, used either alone or in combination. As tolerance to the effects of alcohol and other drugs decline, aging adults have higher risk factors. Addresses issues specific to aging, including late onset addiction, effects of use on performance of activities of daily living, treatment issues and co-occurring disorders such as depression or other chronic illnesses. A multicultural perspective is used, including the role of social class and gender issues. Audit available.

**AB 106 Smoking Cessation 1.00**
Introduces smoking cessation and specific evidenced based practices that have been demonstrated to contribute to successful smoking cessation efforts. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AB 107 Addiction Recovery Mentor 3.00**
Presents an overview of Addiction Recovery Mentor skills, resources and evidence-based practices that have been demonstrated to contribute to successful Peer Mentor Programs. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AB 108 Adolescence and Addiction 3.00**
Examines addiction, substance use and abuse from the adolescent point of view. Includes assessment and treatment planning appropriate to this population and considers ethical and legal ramifications. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and AD 101 and AD 102. Audit available.

**AB 109 Criminality and Addiction 3.00**
Examines the relationship between substance abuse issues and criminal behavior. Includes assessment of risk for criminal behavior and the likelihood of reoffending and evidenced based treatment protocols relevant to the addicted criminally involved person with special emphasis on Cognitive Behavioral Therapy. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AB 110 Substance Abuse Prevention 3.00**
Presents an overview of substance abuse prevention theories and prevention programming applications. Emphasizes theories and models basic to prevention, evidence-based prevention strategies and model programs, strategic planning and outcome evaluation. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AD 109 Criminality and Addiction 3.00**
Examines the relationship between substance abuse issues and criminal behavior. Includes assessment of risk for criminal behavior and the likelihood of reoffending and evidenced based treatment protocols relevant to the addicted criminally involved person with special emphasis on Cognitive Behavioral Therapy. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AD 110 Substance Abuse Prevention 3.00**
Presents an overview of substance abuse prevention theories and prevention programming applications. Emphasizes theories and models basic to prevention, evidence-based prevention strategies and model programs, strategic planning and outcome evaluation. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AD 111 Gambling and Addiction 3.00**
Presents an overview of gambling addiction and evidence-based practices that have been demonstrated to contribute to successful gambling addiction treatment. This is the first course of a two-course class sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**AD 112 Gambling and Addiction 3.00**
Presents evidence-based practice and application of those skills to individuals presenting with gambling addiction concerns. This is the second course of a two-course sequence. Audit available. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and AD 111. Audit available.

**AD 150 Basic Counseling and Addiction 3.00**
Introduces basic skills required for establishing an effective professional helping relationship. Emphasizes in-class practice and feedback. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

**AD 151 Basic Counseling Skills Mastery 1.00**
Provides an opportunity to demonstrate a minimum level of facilitative skills required for initial practicum placement. Demonstrate mastery in responding to client behavior, content, feelings and meaning, through in-class practice and videotape review. Offered on a pass/no pass basis only. Prerequisite: AD 101. Prerequisite/concurrent: WR 122.

**AD 152 Group Counseling and Addiction 3.00**
Provides exposure to the concepts of group process, group development and leader facilitation skills. Emphasizes group therapy and the addiction counselor. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

**AD 153 Theories of Counseling 3.00**
Basic theories of counseling, emphasizing treatment of addiction...
AD 154 Client Record Management and Addiction 3.00 Provides the student the knowledge and skills needed to plan treatment and manage client records. Explores methods for making decisions regarding goals and objectives to be reached by clients during and after treatment. Covers all aspects of client record management including federal and state regulations and American Society of Addiction Medicine (ASAM) placement criteria. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

AD 155 Motivational Interviewing & Addiction 3.00 Designed to facilitate the acquisition of motivational interviewing counseling skills as applied to the arena of addiction counseling. Prerequisites: AD 101, AD 150, AD 151, WR 121. Prerequisite or concurrent: WR 122. Audit available.

AD 156 Ethical and Professional Issues 3.00 Covers ethical and legal issues relevant to the alcoholic and drug counselor. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

AD 157 Motivational Interviewing Skills Mastery 1.00 Provides an opportunity to demonstrate a minimum level of facilitative skills required for Motivational Interviewing (MI) as adapted with the “Anchor Point System” (APS). Demonstrates initial mastery of micro-counseling skills of the MI/APS through the creation of multimedia video/audio segments. Offered on a pass/no pass basis only. Co-requisite: AD 155.

AD 184 Men & Addiction 3.00 Provides an in-depth view of the biological, cultural, and sociological origins of male roles and behavior and explore the implications of this for understanding mental health, sexuality, addiction, and criminal behavior of men. Develops a framework for the essential elements of gender-specific treatment for boys and men. Audit available.

AD 201 Families and Addiction 3.00 A comprehensive survey of all topics related to family work, from intervention to recovery, covering the scope of family work with a special population of families impacted by addiction, whether current or intergenerational. Covers the initial contact with a family, defining and describing all of the possible dynamics, needs and interventions defined in current literature. Prerequisite: AD 101. Audit available.

AD 202 Trauma and Recovery 3.00 Explores the neurobiology of attachment and reward as they relate to the addictive experience. Presents models of relational healing with a strong emphasis on specific skill acquisition that can be used in treatment settings. Utilizes trauma informed and wellness informed approaches targeted to working with families in the process of recovery from addictive disease. Prerequisite: WR 122, AD 101, AD 151.

AD 211 Alcohol & Drug: Special Studies 1.00 Not required for degree and may not be substituted for any required program courses. Audit available.

AD 212 Alcohol & Drug: Special Studies 2.00 Not required for degree and may not be substituted for any required program courses. Audit available.

AD 213 Alcohol & Drug: Special Studies 3.00 Not required for degree and may not be substituted for any required program courses. Audit available.

AD 250 Advanced Counseling and Addiction 3.00 Enhances the professional knowledge and skills of counselors preparing to enter the field. Focuses on current evidence-based practice/best practice models in addiction counseling, integrating a variety of conceptual theories into a comprehensive framework for human behavior, addiction, and change. Prerequisites: AD 101, AD 150, AD 151, WR 121. Prerequisite/concurrent: WR 122. Co-requisite: AD 251. Audit available. Audit available.

AD 251 Advanced Counseling Skills Mastery 1.00 Focuses on increasing counselor empathy and communication skills. Develops skills through in-class practice and videotape review. Offered on a pass/no pass basis only. Co-requisite: AD 250.

AD 255 Multiple Diagnoses 3.00 Covers assessment of chemical dependency clients for communicable diseases and co-existing mental disorders, effective intervention, and referral of clients to optimum resources for resolving coexisting diagnoses. Develops clear ethical guidelines for alcohol and drug counselors practicing within an area of competence. Prerequisites: AD 101, AD 102, AD 151, WR 121. Prerequisite or concurrent: WR 122, PSY 239. Audit available.

AD 270A Practicum: Addiction Provides clinical educational experience in an addiction treatment or DUII educational facility under the supervision of personnel who meet ACCBO requirements. Provides the opportunity to meet the ACCBO work experience requirements. Prerequisites: AD 102, AD 152, AD 153, AD 154, AD 155, AD 156, AD 157, AD 278, MP 201. Corequisite: AD 270B.

AD 270B Practicum: Addiction - Seminar 2.00 Focuses on the integration and synthesis of academic preparation with “real world” addiction counseling experience. Includes consideration of counselor self-care, healthy work practice, professional ethics and ongoing professional development. Corequisite: AD 270A. Audit available.

AD 278 Practicum Preparation 1.00 Provides student with the opportunity to demonstrate facility with the documentation required for the A/D practicum course, and develop an individualized plan for success in practicum. Prerequisite/Concurrent: AD 101, 102, 150, 151, 156, and WR 121.
the course of one term. Instruction and evaluation are self-guided. Students must spend a minimum of 60 hours in the lab. Completion of this course does not meet prerequisite requirements for other math courses.

**ALC 63 Basic Math Skills Lab 3.00** In conjunction with the instructor, students choose a limited number of topics in Basic Math (MTH 20) and/or Introductory Algebra (MTH 60 and 65) to review over the course of one term. Instruction and evaluation are self-guided. Students must spend a minimum of 90 hours in the lab. Completion of this course does not meet prerequisite requirements for other math courses.

**AUTOMOTIVE SERVICE TECHNOLOGY**

**AM 100 Intro to Automotive Systems 4.00** Introduces automotive tools, fasteners, precision measurement, service information systems/manuals and shop procedures. Perform basic automotive service, inspection, and measuring procedures including the practical application of mathematics for the automotive trade. Audit available.

**AM 101 Engine Repair I 4.00** Studies basic theory, design and operation of automotive engines. Engine components are covered in detail including purpose, inspection and repair. Disassemble and reassemble school owned engines to gain experience in hand tool use and proper engine repair and evaluation procedures. Compression and leakage tests are included. Prerequisite: AM 108. Audit available.

**AM 102 Electrical Systems I 4.00** Covers electrical theory, schematic symbols, battery and starter theory, operation, diagnosis and repair. Audit available.

**AM 103 Engine Performance I 4.00** Covers use of automotive scan tools, operation and testing electronic ignition systems, ignition secondary oscilloscope patterns, electronic advance, engine knock control systems, basic timing adjustment and distributor removal and replacement. Prerequisites: AM 108, 101, 102, 112. Audit available.

**AM 104 Steering and Suspension Systems I 4.00** Covers basic principles of steering, suspension and wheel alignment for passenger cars and light duty trucks. Familiarization with tire construction, types and sizing. Practice disassembly and re-assembly of steering and suspension system components. Familiarization and practice in using computerized 4-wheel-alignment equipment and tire balancing machines. Prerequisites: AM 108 and 102. Audit available.

**AM 105 Brake Systems I 4.00** Studies principles of automotive brake systems. Practice disassembly/assembly of system components using school owned equipment. Includes proper measuring and machining of brake drums and discs. Prerequisites: AM 108, 102. Audit available.

**AM 106 Heating and Air Conditioning Systems 4.00** Covers theory, operation and repair of automotive heating and air conditioning systems. Work on approved customer automobiles. Includes testing and repair of electrical and vacuum circuits. Prerequisites: AM 108, AM 102, AM 101 and AM 112. Audit available.

**AM 107 Manual Drive Train and Axles I 4.00** Introduces various designs of manual transmissions and transaxles and to the driveline components of an automobile. Each component is covered in detail including purpose, application, operation, inspection, diagnosis and repair. Disassemble, inspect and assemble school owned units to obtain hands-on experience and familiarization. Prerequisite: AM 108. Audit available.

**AM 108 Introduction to Automotive Systems I 4.00** Orientation to PCC Automotive Service Technology program. Introduces automotive tools, fasteners, precision measurement, service manuals and shop procedures. Perform basic automotive service and inspection procedures. Includes the practical application of mathematics for the automotive trade. Audit available.

**AM 111 Engine Repair 4.00** Introduces basic theory, design and operation of automotive engines. Engine components are covered in detail including purpose, inspection and repair. Disassemble and reassemble school owned engines to gain experience in hand tool use and proper engine repair and evaluation procedures. Compression and leakage tests are included. Audit available.

**AM 112 Electrical II 4.00** Read schematics and work on charging systems and accessories. Prerequisites: AM 108, 102. Audit available.

**AM 113 Engine Performance II 4.00** Study the causes of air pollution, the use of the five gas analyzer, air injection systems, catalytic converters, crankcase ventilation systems, evaporation control systems and federal and state emission control laws. Prerequisites: AM 108, AM 101, AM 102, AM 103 and AM 112. Audit available.

**AM 114 Steering and Suspension Systems II 4.00** The capstone class in a 2-class sequence covering steering system service, suspension system service and 4-wheel alignment. Practice learned skills repairing real steering, suspension and wheel alignment problems. Jobs assigned by instructor, drawing from a pool of customer vehicles, or school owned vehicles. Prerequisites: AM 108, 102, 104. Audit available.

**AM 115 Brake Systems II 4.00** Brake diagnosis and repair of base brakes and anti-lock systems in a laboratory/shop setting. Covers how to do complete brake inspections and determine what repairs are needed. Ordering parts and completing repairs under close instructor supervision. Prerequisites: AM 108, 102, 105. Audit available.

**AM 116 Manual Drive Train and Axles II 4.00** Work on approved customer automobiles diagnosing and servicing components of standard transmissions/transaxles. Provides realistic understanding of procedures which take place in an automotive repair facility each day. Prerequisites: AM 108, 107. Audit available.

**AM 121 Drive Train Systems II 4.00** Introduces automatic transmissions/transaxles, the study of power flow and diagnosis of automatic transmission mechanical and hydraulic systems. Lecture and lab topics include proper rebuild procedures, component identification and dynamometer testing of a student built automatic transmission. Audit available.

**AM 122 Electrical III 4.00** Work on approved automobiles and study how to diagnose electrical problems, read schematics, use test equipment, perform satisfactory wire connections, test, repair, and/or replace electrical units. Prerequisites: AM 108, 102 and 112. Audit available.

**AM 123 Engine Performance III 4.00** Study the operation, servicing and testing of electronic fuel injection systems, on board diagnostics I and II, idle control systems. Students will diagnose failed fuel injection vehicles. Prerequisites: AM 108, AM 101, AM 102, AM 103, AM 113 and AM 112. Audit available.

**AM 125 Brake Systems III 4.00** Work on approved customer automobiles to diagnose customer complaints, analyze costs, repair and/or replace faulty brakes or related parts and use safety check sheets. Prerequisites: AM 108, 102, 105, 115.

**AM 127 Automatic Transmission/Transaxle I 4.00** Work on automatic transmissions/transaxles and study how to trace the power flow, diagnose problems, disassemble, inspect and evaluate, clean and layout components. Reassemble and adjust transmission, and test the unit for its proper operation. Prerequisites: AM 108, 102. Audit available.

**AM 131 Drive Train Systems I 4.00** Introduces manual transmissions/transaxles, the study of power flow and diagnosis of manual transmission systems. Lecture and lab work includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.

**AM 132 Drive Train Systems III 4.00** Introduces work on approved customer vehicles diagnosing and servicing automatic and manual drive train customer concerns. Provides a realistic experience and develops an understanding of procedures, which take place daily in an automotive repair facility. Audit available.

**AM 133 Engine Performance IV 4.00** Continuation of Unit 23. Prerequisites: AM 108, AM 101, AM 102, AM 103, AM 113, AM 123 and AM 112. Audit available.

**AM 137 Automatic Transmission/Transaxle II 4.00** Work on approved customer automobiles
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diagnosing and servicing components of the automatic transmission/transaxle. Provides specific understanding of shop procedures that take place in an automotive repair facility. Prerequisites: AM 108, 102, 127. Audit available.

AM 141 Undercar Systems II 4.00 Continuation of Undercar I, students will diagnose and repair base brakes and anti-lock systems. Introduce the basic principles of steering, suspension and wheel alignment for passenger cars and light duty trucks. Become familiar with tire construction, types and sizing. Practice disassembly and re-assembly of steering and suspension system components. Become familiar and practice using computerized 4-wheel-alignment equipment and tire balancing machines. Audit available.

AM 142 Undercar Systems III 4.00 Covers diagnosis and repair of steering system service, suspension system service and 4-wheel alignments in a laboratory/shop setting. Includes how to perform complete steering and suspension system inspections and determine what repairs are needed, order parts and complete repairs under close instructor supervision. Vehicles serviced are drawn from a pool of customer or school owned vehicles. Audit available.

AM 143 Engine Performance 5 4.00 Work on approved customer vehicles and perform maintenance and/or drivability hands on work much the same as would be done in the repair industry. Prerequisites: AM 108, 101, 102, 103, 113, 123, 133. Audit available.

AM 151 Undercar Systems I 4.00 Introduces principles of automotive braking systems. Practice disassembly/assembly of brake system components using school owned equipment including proper measuring and machining of brake drums and discs. Audit available.

AM 153 Engine Performance VI 4.00 Continuation of AM 143. Prerequisites: AM 108, 101, 102, 103, 113, 123, 133. Audit available.

AM 161 Electrical Systems I 4.00 Introduces electrical theory, schematic symbols, battery and starter theory, operation, diagnosis and repair. Lecture and lab work includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.

AM 162 Electrical Systems II 4.00 A continuation of reading schematics, starting and charging system theory, operation, diagnosis and repair. Lecture and lab work includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.

AM 163 Electrical Systems III 4.00 Introduces customer work on approved automobiles including diagnosis of electrical problems, reading of schematics, use of test equipment, satisfactory completion of wire connections, testing, repair, and/or replacement of electrical units. Audit available.

AM 171 Heating & Air Conditioning Systems 4.00 Introduces theory, operation and repair of automotive heating and air conditioning systems. Students work on approved customer automobiles which includes testing and repair of HVAC control systems. Audit available.

AM 181 Engine Performance I 4.00 Introduces the use of automotive scan tools, lab scopes and electronic test equipment. Covers the operation and testing of electronic ignition systems including EI, DI and related components. Audit available.

AM 182 Engine Performance II 4.00 Introduces the causes of air pollution and climate change, the use of the five gas analyzer, catalytic converters, crankcase ventilation systems, evaporative control systems and federal and state emission control laws. Audit available.

AM 183 Engine Performance III 4.00 Introduces the operation, service and testing of fuel management systems, on board diagnostics and idle control systems. Students diagnose failed fuel management systems. Audit available.

AM 201 Auto Shop Lab I 4.00 Capstone course encompassing all theory and application of prerequisite courses in a live shop setting. Emphasis on advanced engine performance theory will be present. First class in a three course sequence. This class may be repeated one time for credit. Audit available.

AM 202 Auto Shop Lab II 4.00 Continuation of the capstone course in which students work on approved customer vehicles and perform maintenance, repair and/or drivability work in a live shop setting. Course will include an emphasis on alternative fuel vehicle technologies. Second class in a three course sequence. This class may be repeated one time for credit. Audit available.

AM 203 Auto Shop Lab III 4.00 Final capstone course in which students work on approved customer vehicles and perform maintenance, repair and/or drivability work in a live shop setting. Third class in a three course sequence. This class may be repeated one time for credit. Audit available.

AM 280A Cooperative Education: Automotive Service Includes automotive service work in a live shop setting performing diagnostic and repair work under the supervision of an automotive technician. Emphasizes independent learning and workplace skills with limited instruction. Work is mastered at an automotive repair facility. May be taken three times for credit. Department permission required.

AVIATION MAINTENANCE TECHNOLOGY

AMT 101 Introduction to Aviation Maintenance Technology 1.00 Covers aviation maintenance technology careers, including program admission and completion requirements, continuing training and certification requirements, general industry safety standards, and career opportunities within the aviation maintenance industry. This course is a prerequisite for all other AMT courses.

AMT 102 Aircraft Electricity I 4.00 Includes basic electrical theory, interpretation of electrical schematics, principles of component operation, and alternating current theory. Prerequisites: Placement into RD 90 or higher; WR 90 or higher; AMT 101 with a minimum grade of "C" or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the department Math test with 70% or higher. Audit available.

AMT 105 Aviation CFRs and Related Subjects 4.00 Presents federal aviation regulations as they pertain to the aircraft mechanic, plus some "action" learning on servicing and operation of the aircraft on the ground. Prerequisites: Placement into RD 90 or higher; WR 90 or higher; AMT 101 with a minimum grade of "C" or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 106 Aircraft Applied Science 4.00 Covers aircraft weight and balance procedures and associated record keeping. Also covers aircraft drawings, precision measuring tools and some basic principles of physics. Prerequisites: Placement into RD 90 or higher; placement into WR 90 or higher; AMT 101 with a minimum grade of "C" or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 107 Materials & Processes 4.00 Covers several general aircraft maintenance subjects including power tools, shop equipment, aircraft hardware, fluid lines and fittings, non-destructive testing methods, heat treatment, aircraft cleaning, and corrosion control. Prerequisites: Placement into RD 90 or higher; placement into WR 90 or higher; AMT 101 with a minimum grade of "C" or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 108 AMT Practicum/General 2.00 Provides further development of students’ skills through practical application before graduation from the FAA-approved Airframe or Powerplant curriculum. This course is used as a comprehensive tool to evaluate student strengths and weaknesses. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106, AMT 107, and MTH 60 or Department Math test with a 70% or higher. Audit available.

AMT 109 Assembly & Rigging 4.00 Covers methods of assembly and rigging commonly used in preparing both fixed and rotary wing aircraft for a safe
COURSE DESCRIPTIONS

Presents basic electronic theory; inspection and servicing of aircraft batteries; study of electrical system components; the installation and servicing of airframe/engine electrical wiring, controls, switches, indicators and protective devices; and electrical system inspection and troubleshooting. Prerequisites: Placement into RD 90 or higher; WR 90 or higher; AMT 101 with a minimum grade of "C" or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 115 Aircraft Structures & Inspection 4.00 Examines structural designs and methods of inspecting the aircraft to assure continued operation in the “as engineered” configuration. Emphasizes the interpretation of airworthiness directives, service bulletins and other maintenance documents. Technical writing skills required to complete FAA forms and records. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 117 Reciprocating Engine Theory & Maintenance 4.00 Covers aircraft reciprocating engine theory and various maintenance procedures and techniques. Includes the use of manufacturer’s publications. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 120 Propellers and Engine Installation 4.00 Examines propeller theory and repair within limitations imposed by FAA Regulation Part 65, plus control and auxiliary systems, such as anti-ice and synchronization. Unducted fan systems are explored and engine removal and installation are accomplished. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 121 Turbine Engine Theory and Maintenance 4.00 Presents theory for all turbine engines, but does not build expertise in any one design. Maintenance includes inspection, checking, servicing and repairing turbine engines and turbine engine installations. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 123 Ignition Systems 4.00 Covers reciprocating and turbine engine ignition system theory and overhaul practices, plus the relationships of the complete ignition system to the powerplant and its operation. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 124 Fuel Metering Systems 4.00 Examines the many methods used to move air and fuel into and through an engine in a ratio producing safe and efficient engine operation under widely varying conditions. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 203 Aircraft Electricity II 4.00 Presents basic electronic theory; inspection and servicing of aircraft batteries; study of electrical system components; the installation and servicing of airframe/engine electrical wiring, controls, switches, indicators and protective devices; and electrical system inspection and troubleshooting. Prerequisites: Placement into RD 90 or higher; WR 90 or higher; AMT 101 with a minimum grade of “C” or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 204 Aircraft Electricity III 4.00 Covers airframe/engine electrical components; inspection, check, service and repair of alternating and direct current electrical systems; the application of electrical principles used in sensing, indicating and control of airframe and powerplant systems. Prerequisites: Placement into RD 90 or higher; WR 90 or higher; AMT 101 with a minimum grade of “C” or higher. Prerequisite or concurrent registration: MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 208 Aircraft Systems 4.00 Study of various airframe systems including ice and rain, cabin atmosphere, position and warning, and fire protection. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 211 Composite Structures 4.00 Covers modern bonded structures such as honeycomb and laminated components. Includes discussion of inspection and limited repairs to wood structures. Examines methods of removing finishes, corrosion proofing and painting aircraft and aircraft components. Includes inspection and recovering operations for fabric covered aircraft. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 212 Sheet Metal 4.00 Covers methods for sheet metal repairs to aircraft and methods of forming repair parts for damaged aircraft. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 213 Hydraulics, Pneumatics and Landing Gear 4.00 Covers inspection and repair of aircraft landing gear and hydraulic system components. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 214 Instruments, Communication & Navigation Systems 4.00 Presents basic functions, internal workings and maintenance procedures for instruments, communication, navigation and autopilot systems used on complex, modern aircraft. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 216 AMT Practicum/Airframe 2.00 Provides further development of students’ skills through practical application before graduating from the FAA-approved Airframe curriculum. This course is used as a comprehensive tool to evaluate student strengths and weaknesses. Prerequisite: AMT 108. Prerequisite/concurrent: AMT 208, AMT 109, AMT 211, AMT 212, AMT 213, AMT 214, AMT 115, WLD 210. Audit available.

AMT 218 Powerplant Inspection 4.00 Covers proper inspection of the entire engine installation, including exhaust systems, engine instrumentation, lubrication systems and control systems. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 219 Turbine Engine Overhaul 4.00 Covers removing, disassembling, cleaning, inspecting, reassembling and reinstalling a turbine engine. Emphasizes engine manufacturer’s publications. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 222 Reciprocating Engine Overhaul 4.00 Covers machining and overhaul processes for reciprocating engines. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher. Audit available.

AMT 225 AMT Practicum/Powerplant 2.00 Provides further development of students’ skills through practical application before graduating from the FAA-approved Powerplant curriculum. This course is used as a comprehensive tool to evaluate student strengths and weaknesses. Prerequisite: AMT 108. Prerequisites/concurrent: AMT 117, AMT 218, AMT 219, AMT 120, AMT 121, AMT 222, AMT 123, AMT 124. Audit available.

AMT 228 A&P Shop Practice Some students feel the need for more shop experience in areas of choice. When it is within the practical capabilities of the department to offer that experience, the student may take one or more shop practice modules. The module may, under some circumstances, be substituted for the A&P Make-up course. Completion of most of the required A&P courses is desirable. Audit available.

APR 100 Exploring Trades & Apprenticeship 1.00 Explores career opportunities within the Trades. Includes traditional careers and new opportunities in fields such as Renewable Energy and Sustainability. Introduces resources for assisting students in identifying skills needed to succeed in these fields. Audit available.

APR 101 LME: Electrical Theory Fundamentals 3.00 Covers electrical theory and math for computing the values of voltage, amperage, resistance and power. Also covers various types of electrical circuits (series, parallel, combination) when applying Ohm’s Law. Introduces electrical safety, conductors,
wire sizes and their application as per the American Wire Gauge (AWG) Table. The principles of voltage drop, efficiency and cost of electrical energy will also be covered. Audit available.

APR 102 LME: DC Motors 3.00 Covers the principles of magnets, magnetism and electromagnetism; AC/DC generators and the process of generating a voltage; DC motors and alternating current principles, including the components of an AC sine wave/waveform. Electrical safety, principles of inductance, inductive reactance, capacitance and capacitive reactance, various types of capacitors, capacitor testing and their use in an industrial environment will also be discussed. Prerequisites: APR 101 or TE 9631. Audit available.

APR 124 Electrical Systems Operations 3.00 Covers alternating current measure instruments, power factor in electrical circuits, motor nameplate data, reading schematics, and electrical safety standards especially for Arc Blast and Arc Flash prevention and protection. Prerequisite: APR 102 or TE 9623. Audit available.

APR 104 LME: Luminaries & Equipment 3.00 Introduces lighting fundamentals and their application in the industrial environment. Also covers fuses, receptacles, wiring methods, blueprints, batteries and some solid state components related to their use. Prerequisites: APR 103 or TE 9633. Audit available.

APR 121 Introduction to Electricity and Circuits 3.00 Covers general atomic theory, electron flow in conductors, calculations of Ohms law when determining the values of voltage, current, resistance and power in series, parallel and combination electrical circuits. Covers sizing and the application of conductors and the concept of Voltage Drop in electrical circuits. Audit available.

APR 122 AC/DC Motors Principles 3.00 Covers the basic principles of alternating current, direct current, and electromagnetism as applied to generators, and alternating current and direct current motors, including the concepts of inductance, inductive reactance, capacitors, capacitive reactance, and their effects upon alternating current circuits. Prerequisites: APR 121 or TE 9610. Audit available.

APR 123 AC Theory for Motors and Transformers 4.00 Focuses on alternating current power distribution, transformers, motors, storage cells, solid state semiconductor devices, and Delta/Wye three phase motor winding connections as applied to the heavy industrial environment. Prerequisite: APR 122 Audit available.

APR 124 Electrical Systems Operations 3.00 Covers alternating current measure instruments, test equipment, advanced motor theory, blueprint reading, electrical related materials, AC systems, advanced transformer theory, lighting, grounding and bonding, contactors, relays and general installation requirements to meet code specifications. Prerequisites: APR 123 or TE 9612. Audit available.

APR 125 Electrical Circuits and Wiring Methods 3.00 Covers residential and commercial lighting, fixtures, and ballast in detail. Includes conductor selection, overcurrent, protection, motor maintenance, calculations, controls, troubleshooting, services, construction upgrades, wire methods, tagout, lockout and appliances. Covers series, branch, and parallel circuits in detail, and the basic use of a multimeter to check for voltage, current, and resistance. Prerequisites: APR 124 or TE 9613. Audit available.

APR 126 Electrical Systems Installation per NEC 3.00 Covers standby electrical systems, temporary electrical services, fire alarm systems, specialty systems, advanced controls, heat tracing, freezing protection, installation practices, and what constitutes a low voltage and limited energy circuit as per the NEC and the requirements for each. Prerequisites: APR 125 or TE 9614. Audit available.

APR 131 Refrigeration I 2.00 Covers refrigeration principles and different basic cycles which include heat transfer, temperature, and basic physics and gas laws. Lab includes the use of tools and instruments used for charging and evacuation and recovery methods. APR 131 and FMT 101 both cannot be taken for credit. Prerequisites: MTH 20; (WR 90 or ESOL 262); (RD 90 or ESOL 260). Audit available.

APR 132 Refrigeration II 2.00 Covers operation of refrigeration system components. Includes compressors, condensers, evaporators, refrigerants and metering devices. Lab includes system components and compressor testing methods, focusing on charging, evacuation and recovery methods. APR 132 and FMT 102 cannot both be taken for credit. Prerequisites: APR 131 or FMT 101 or TE 9242. Audit available.

APR 133 Refrigeration III 2.00 Covers the operation of refrigeration HVAC systems, emphasizing maintenance and controls. Lab includes troubleshooting systems along with evacuation and charging techniques. APR 133 and FMT 103 cannot both be taken for credit. Prerequisites: APR 132 or FMT 102 or TE 9243. Audit available.

APR 150 Pre-Apprenticeship Construction Training 6.00 Introduces Evening Trades and Apprenticeship Program (ETAP) students to the environment of the commercial construction trades, including workplace safety, construction mathematics, blueprint reading and layout, foundations, wall layout and framing, and roof structures. Prerequisite: Department Permission required. Audit available.

APR 151 Pre-Apprenticeship Construction Trade Preparation 8.00 Includes Pre-Apprenticeship Construction Trade topics such as industry orientation, hazardous materials, general on-the-job questions, material handling, scaffolding, rigging, fire protection, hand and power tool use, fall protection, and electrical basics. Covers safety procedures that apply to each topic. Also covered will be related terminology, task planning, methods and functions of construction, apprenticeship application process, program requirements, resume and interview skills and OSHA 30-hour safety training. Recognized by the Oregon Bureau of Labor and Industry: Apprenticeship and Training Division’s Council as an approved Pre-Apprenticeship program. Prerequisite: Place-ment in MTH 60 or higher or department permission. Audit available.

APR 201 Electrical Motor Controls 2.00 Provides knowledge and skills needed to design, install, maintain, service and troubleshoot electric motors. Focuses on the operation and installation of control systems, specifically motor starters and controllers. Electromagnetic controls, motors and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. APR 201 and ELT 201 cannot both be taken for credit. Prerequisites: FMT 111 or APR 104 or Department Permission. Audit available.

APR 202 LME: Electrical Code Level I 4.00 Provides a working knowledge of the NEC. Assists LME apprentices in preparing for the state electrical exam. Topics include definitions, requirements for electrical installations, identification and use of electrical conductors, wiring, circuit-protection, wiring methods, materials, and electrical safety standards. Prerequisites: APR 104 or TE 9634. Audit available.

APR 203 LME: Electrical Code - Level II 4.00 Provides a working knowledge of the NEC. Topics include installation code requirements for the following: electrical equipment for general use such as motors, luminaries, air conditioners, cords, switchboards and panel boards. Also covers special occupancies which will assist students in locating and understanding electrical code requirements for hazardous locations such as gas stations, spray paint booths, aircraft hangars, health care facilities, places of assembly, theaters, manufactured buildings, mobile homes, temporary locations, etc. Electrical standards will be emphasized. Prerequisites: APR 202 or TE 9636. Audit available.

APR 204 LME: Electrical Code - Level III 4.00 Provides a working knowledge of the NEC. Assists LME apprentices in preparing for the state electrical exam. Topics include: Special Equipment including electric signs, canes, hoists, elevators, electric welders, information technology equipment, pools, and foundations; Special Conditions including emergency systems, Class 1, 2 and 3, low voltage control circuits, fire alarm systems, and fiber optics; and Communication Systems. Covers State of Oregon statutes governing electrical installations, building code division administrative rules covering license requirements and responsibilities, State of Oregon amendments, supplemental code refer-
ence materials, safety standards and practice exams. Prerequisites: APR 203 or TE 9637. Audit available.

**APR 221 Advanced AC Circuitry 3.00** Includes the theory of alternating current and power. Also includes alternating current, resistance in AC circuits, inductance and inductive reactance, capacitance and capacitive reactance, power factor correction, power in AC circuits, vector analysis and three phase connections and calculations. Prerequisites: APR 124 or TE 9615. Audit available.

**APR 222 Hazardous Locations 3.00** Includes introduction to hazardous locations, Class I, II, III installations, commercial garages-repair and storage, aircraft hangers, gasoline dispensing and service stations, bulk storage plants, finishing processes and health care facilities. Prerequisites: APR 221 or TE 9616. Audit available.

**APR 223 Motor Control Operations including PLC's 3.00** Reviews basic motor controls and progresses to moderately complex machine controls. Includes fundamentals of motor control, control of motor starting, control components, programmable controllers, pilot devices, control circuit diagrams, solid state logic and diagrams, development of control circuits and troubleshooting electrical controls. Prerequisites: APR 222 or TE 9617. Audit available.

**APR 224 Electrical Code - Level I 4.00** Emphasizes the use and understanding of the National Electrical Code. Assists plant maintenance electricians in preparing for the state electrical exam. Topics include grounding, motors, wiring methods, overcurrent protection, branch circuits, calculations, feeders and specialty codes. Prerequisites: APR 223 or TE 9618. Audit available.

**APR 225 Electrical Code - Level II 4.00** Emphasizes the use and understanding of the NEC. Topics include cable, raceway, busway, cablebus, switches, panel boards, lighting, heating equipment, transformers and the taking of practice exams. Prerequisites: APR 224 or TE 9619. Audit available.

**APR 226 Electrical Code - Level III 4.00** Emphasizes the use of understanding of the NEC. Topics include code articles, OAR’s, supplemental code reference materials, calculations and practice exams. Completion of the series prepares the student apprentice to become a licensed Manufacturing Plant Electrician Journey person. Prerequisites: APR 225 or TE 9620. Audit available.

**APR 227 NEC Review and Exam Preparation 3.00** Assists and prepares the Electrical Professional and the Electrical Apprentice to take State of Oregon Electrical Licensing Examinations. Includes use of the National Electrical Code, Oregon Electrical Specialty Codes, and applicable Oregon Administrative Rules. Includes electrical calculations applicable to an examination and to the workplace. Recommended: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

**APR 230 National Electrical Code 3.00** Instructs the electrical professional where and how to find required information in the NEC book, demonstrating how the various articles work together to provide complete information on a subject. Most code articles (90 through 450) will be explained in detail. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. APR 230 and ELT 230 cannot both be taken for credit. Audit available.

**APR 231 National Electrical Code II 3.00** Prepares electricians for state examination as prescribed by Oregon State Building Codes Division. Includes code explanations and applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. APR 231 and ELT 231 cannot both be taken for credit. Audit available.

**ARCH 100 Graphic Communication for Designers 3.00** Addresses the fundamentals of perspective drawings as a communicative device. Develops perspective, freehand sketching and diagramming skills, by building a graphic vocabulary and establishing a language of architectural communication. Audit available.

**ARCH 101 Introduction to Residential Design 3.00** Introduces design process and drawing for residential design focusing on design of a new single family residence. Prerequisite: ARCH 110. Audit available.

**ARCH 102 Architectural Graphics 2 3.00** Introduction to the design process and drawing for commercial design focusing on design of new light frame commercial building. Prerequisite: ARCH 110. Audit available.

**ARCH 110 Introduction to Architectural Drawing 2.00** Covers basic Architectural drawing skills including lettering, line quality, plans, elevations, sections and axonometric drawings. Audit available.

**ARCH 111 Intro to Residential Construction Documents 3.00** Covers standards of architectural drafting and preparation of construction documents for typical residential construction. Examines construction processes and terminology. Prerequisite: ARCH 110, 124 and (ARCH 126 or ID 125 or DRF 126) and (ARCH 161 or ID 138) Recommend: ARCH 121, 136. Audit available.

**ARCH 112 Intro to Commercial Construction Documents 4.00** Covers standards of architectural drafting and preparation of construction documents for typical light frame commercial construction. Examines construction processes. Prerequisites: ARCH 111, 136, 162. Audit available.

**ARCH 113 Site Planning 2.00** Covers site development, including surveying existing grades, locating existing and future buildings, driveways erosion control, storm water management and drawing site plans. Prerequisite: ARCH 110. Audit available.

**ARCH 121 Structural Systems I 2.00** An overview of residential structural systems, including identification of structural members, loads and load paths and reading structural framing plans. Prerequisite/site concurrent: ARCH 124. Audit available.

**ARCH 122 Structural Systems 2 3.00** Covers the structuring of residential buildings including sizing of wood rafters, joists, beams. Prerequisite: ARCH 121, MTH 60 or equivalent placement test scores. Audit available.

**ARCH 123 Structural Systems 3 3.00** Covers basic residential retaining walls, concrete foundations and residential prescriptive path solutions for wind and seismic loads. Prerequisite: ARCH 122, MTH 65 or equivalent placement test scores. Audit available.

**ARCH 124 Introduction to AutoCAD 3.00** Introduces AutoCAD software as a design and drafting tool for architecture and interior design. Only one of ARCH 126, ID 125, or DRF 126 can be taken for credit. Audit available.

**ARCH 125 Introduction to Google SketchUp 3.00** Introduces basic 3-D modeling terminology, concepts and tools used to create simple building models and useful everyday shapes using SketchUp 3-D modeling software. Audit available.

**ARCH 131 Sustainable Building Structures 4.00** Focusses on creating buildings that are sited, designed, constructed, operated and maintained for the health and well-being of the occupants, while minimizing impact on the environment. Prerequisite: ID 121 Prerequisite/concurrent: ARCH 224. Audit available.

**ARCH 132 Residential Building Codes 2.00** Introduction to land use zoning and international residential building codes. Selected portions of the code will be discussed, with application to sample building plans. Prerequisite/concurrent: ARCH 124 or BCT 103. Audit available.

**ARCH 133 Commercial Building Codes 2.00** Introduction to land use zoning and Oregon Building Codes for commercial buildings, using International Building Code. Selected portions of the code will be discussed, with application to sample buildings. Prerequisite/concurrent: ARCH 124 or BCT 103. Audit available.

**ARCH 134 Energy Conservation Code**
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ARCH 136 Intermediate AutoCAD 3.00
In-depth study of computer-aided-drafting using AutoCAD software and its applications to architecture. Prerequisite: ARCH 126 or ID 125. Audit available.

ARCH 137 AutoCAD Architecture 3.00
Introduction to AutoCAD Architecture which offers a variety of tools not available in the base AutoCAD software, including 3D objects representing the most common architectural components such as walls, doors, windows, stairs and roofs. Prerequisite: ARCH 136 or DRF 136. Audit available.

ARCH 140 Introduction to CHIEF ARCHITECT 3.00
Introduces CHIEF ARCHITECT software as a design and drafting tool, its applications to architecture, and covers creation, retrieval and modification of drawings using basic commands. Course is also worth 60 LU credits to AIA members. Audit available.

ARCH 161 Residential Print Reading 2.00
Introduces methods to identify, communicate and apply information found on typical residential construction drawings. Audit available.

ARCH 162 Commercial Print Reading 2.00
Introduces methods to identify, communicate and apply information found on typical commercial construction drawings. Recommended: ARCH 161. Audit available.

ARCH 200 Principles of Architectural Design 4.00
Introduces concepts, theories and practices of the discipline of architecture. Includes study of perceptual, environmental, technical and organizational concepts through lectures and individual projects in observing architectural spaces and forms. Audit available.

ARCH 201 Residential Studio 6.00
Covers design development and construction documents for a new single family residence. Prerequisites: ARCH 101, 111, 113, 122, 124, 132, 136, and ART 215. Audit available.

ARCH 202 Commercial Studio 4.00
Covers the design process and schematic/presentation drawings for a light frame commercial building. Prerequisites: ARCH 101, 112, 133 and (ARCH 127 or 237). Audit available.

ARCH 203 Residential Renovation Studio 6.00
Covers “as built” drawings, design and construction documents for a residential remodel/addition. Prerequisites: ARCH 101, 111, 113, 122, 124, 132, 136, and ART 215. Audit available.

ARCH 204 Green Residential Studio 4.00
Advanced study of sustainable building design and systems, and applied to residential buildings. Includes site analysis passive technologies, and use of sustainable building materials. Concepts will be applied to an actual house design in a studio format. Prerequisite: ARCH 101 or department approval for similar experience. Prerequisite or concurrent registration: ARCH 131 and 224, and ID 121 and BCT 206; or instructor permission. Audit available.

ARCH 224 Active and Passive Building Systems 4.00
Advanced study of structural systems, mechanical systems, specifications, and building codes in residential and small commercial buildings. Prerequisite: ARCH 121, 124. Audit available.

ARCH 237 Introduction to Revit Architecture 3.00
Introduces Revit Architecture and its applications to architectural design and drafting. Audit available.

ARCH 246 AutoCAD 3D and Solid Modeling 3.00
Provides thorough coverage of 3-dimensional drafting and design procedures. Concepts examined will include 3D primitives, User Coordinate Systems, 3D V points, complex extrusions, regions, shading and rendering, 3D models and supportive AutoCAD 3D databases. This course is 30 total contact hours and is also worth 60 LU credits to AIA members. Prerequisite: ARCH 136. Audit available.

ARCH 247 Intermediate Revit Architecture 3.00
Explores Revit Architectures intermediate commands and features and its application to architecture. Prerequisite: ARCH 237 Audit available.

ARCH 256 Detail Drawing with AutoCAD 3.00
Develops skills in creating construction detail and section drawings using appropriate scale, line weights, symbols and annotations. Prerequisite: ARCH 136. Audit available.

ARCH 280 Cooperative Education: Architectural Design and Drafting
Work or observe on approved job sites. Student receives as varied and complete an experience as possible under job conditions. Credits are variable and based on the number of clock hours student spends on job site. Must be coordinated with the supervisor, instructor, and cooperative education specialist. Department permission required.

ART 101 Understanding Architecture 4.00
Introduces aesthetic, historical, and critical issues of the visual arts. Presents aspects of drawing, painting, sculpture and craft in terms of experiencing, appreciating and understanding their roles in our lives. The series ART 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 103 Understanding New Media Arts 4.00
Introduces aesthetic, historical, and critical issues of new media arts and design. Presents aspects of printmaking, photography, graphic design, video, film, performance, installation, and other forms of time-based art in terms of experiencing, appreciating and understanding their roles in our lives. The series ART 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 115 Basic Design - 2D Foundations 3.00
Introduces two dimensional black and white foundations studio experience centered on creative problem solving. Develops perceptual awareness and understanding. Establishes critical skills and personal artistic vision. Investigates a broad range of materials, techniques and projects to explore black and white design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available.

ART 116 Basic Design - Color Foundations 3.00
Introduces color foundations studio experience centered on creative problem solving. Develops perceptual awareness and understanding. Establishes critical skills and personal artistic vision. Investigates a broad range of materials, techniques and projects to explore color design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available.

ART 117 Basic Design - 3D Foundations 3.00
Explores ways of seeing and creating work that acknowledges personal artistic intentions. Examines various 2-D, 3-D, and 4-D media and processes used to develop and encourage creative problem solving. Establishes critical skills necessary to evaluate art through critiques, discussions, and artistic presentations. Investigates artistic intent, aesthetic and structural solutions, and perceptual awareness. Recommended: an introduction to art, art history or a sense of curiosity and a willingness to experiment. May be taken 3 times for credit. Audit available.

ART 119 Basic Design - 4D Foundations 3.00
Introduces the basic principles of time, as it relates to the creative arts, which include the notion of occurrence and the episodic, duration, tempo, intensity, scope and context. Introduces concepts, processes and basic use of related tools and technology in preparation for continuing fine and design art work at the 200 level. Uses a broad range of materials, techniques and projects to engage concepts with reference to historical
and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available.

ART 131 Introduction to Drawing 3.00 Explores basic perceptual drawing techniques and tools as well as the development of the language of drawing in historical and contemporary contexts. Develops critical skills for sighting, measuring, designing and constructing in drawing. May be taken three times for credit. Audit available.

ART 140 Digital Photography I 3.00 Introduces digital photography as it relates to creative arts, history, media and culture in both a historical and contemporary context. Introduces critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. Requires access to a camera with manual exposure controls, DSLR (digital single-lens-reflex) cameras are preferred. Recommended: ART 141 or ART 142. Audit available.

ART 141 Introduction to Photography 3.00 Explores photography from film to digital as it relates to creative arts, history, media and culture in both a historical and contemporary context. Introduces photographic processes, principles and technology in preparation for continuing fine art and media based work. Develops the use of self-reflection and peer critique in photographic practice. Requires access to a camera; film-based SLR (single-lens-reflex or DSLR (digital single-lens-reflex) cameras are preferred but not required. Audit available.

ART 142 Introduction to Black & White Photography (Darkroom) 3.00 Explores black and white darkroom photographic processes, techniques and concepts. Addresses historical and contemporary issues specific to photography. Develops photographic practices using peer critique and self-reflection. Requires access to a manual, SLR (single-lens reflex) film camera. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 143 Black & White Photography II (Darkroom) 3.00 Explores intermediate darkroom photographic techniques. Develops creative problem solving by utilizing a broad range of intermediate darkroom processes (e.g. film development, printing, finishing) to create a print. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Requires access to a film, SLR (single-lens-reflex) camera with manual exposure controls. Prerequisite: ART 142 or Instructor Approval. Audit available.

ART 181 Painting I 3.00 Explores basic studio painting techniques, materials, and concepts while addressing historical and contemporary issues. Presents a conceptual framework for critical analysis along with basic art theory. May be taken three times for credit. Recommended: Art 116. Audit available.

ART 197 Artist’s Skills/Practical Issues 3.00 Professional practices relevant to emerging artists’ careers. Workshop/lecture format includes resume and portfolio preparation, developing resources and community, gaining exposure and representation for artwork, creating publicity, basic marketing and exhibition strategies, presenting and installing art work, business concerns, art market dynamics, art collecting. Field trips to local galleries and/or guest lectures. Practical experience gained in PCC gallery, through internships, and/or through Service Learning Projects. Audit available.

ART 198 Special Topics in Art A variable topics course offering special classes and workshops in art and in art history. Course affords novel opportunity to explore out-of-the-ordinary skills, themes, and subjects, including art travel. Audit available.

ART 204 History of Western Art 4.00 Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment of a particular era. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Paleolithic, Ancient Near Eastern, and Aegean cultures, beginning about 30,000 BCE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 204H History of Western Art: Honors 4.00 This is the honors version. Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Renaissance and Baroque periods, beginning about 1300 CE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and 3.25 GPA. Audit available.

ART 206 History of Western Art 4.00 Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Renaissance and Baroque periods, beginning about 1300 CE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 206H History of Western Art: Honors 4.00 This is the honors version. Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Renaissance and Baroque periods, beginning about 1300 CE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and 3.25 GPA. Audit available.

ART 207 History of Asian Art 4.00 Examines visual art in relation to the culture of India from the Neolithic through the modern period. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 208 History of Asian Art 4.00 Examines the visual arts in relation to the culture of China from the Neolithic through the modern period. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 209 History of Asian Art 4.00 Examines the visual arts in relation to the culture of Japan from the Neolithic through the modern period. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 210 Women in Art 4.00 Covers the work of women artists from antiquity to the present. Examines works of the most important women artists from each period in relation to the changing roles of women in society and to the canon of art history. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 211 Modern Art History - 19th Century Art in Europe & America 4.00 Explores the beginning of the modern world and modern societies in Europe and the United States. Examines and analyzes the visual arts to reveal some effects of societal changes, and to gain insight into our modern world. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 212 Modern Art History - Early 20th Century Art 4.00 Explores early 20th century revolutions in science and technology, psychology and philosophy. Examines and analyzes the visual arts to reveal some effects of those changes, and to gain insight into our modern world. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.
ART 213 Modern Art History - Art Since 1945 4.00 Focuses attention on American art, as World War II ended the supremacy of Europe in the visual art world. Analyzes art since 1945 to explore the ideas behind it, to reveal our culture and values and to gain a greater understanding of contemporary art with its global perspective. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 214 History of Graphic Design 4.00 Explores the history of graphic design from the earliest communication technologies to the present, with a focus on the Modern era. Examines changes in style and technology within the field and considers the relationship between graphic design and its cultural, political and social contexts. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 215 History of American Residential Architecture 3.00 Examines the historical origins and elements of American house styles in order to develop insights into the residential architecture of our own era. Audit available.

ART 216 Introduction to the History of Photography 4.00 Traces the history of photography since its processes were first announced in 1839. Examines photographs as aesthetic objects, and as documents of history, scientific exploration and social change. Locates the medium and practice of photography within a broader social and artistic context. Explores photography within the fields of art, science and journalism viewing, analyzing and discussing ways in which the presence of the photograph has shaped our relationship to the world around us. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 217 Comics Art & Literature 3.00 Examines comics art as a medium of visual narrative. Analyzes aesthetic qualities unique to comic books and graphic novels in artistic, historical, and literary contexts using seminal texts. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 218 Lettering Calligraphy I 2.00 Covers practical and creative uses of calligraphy, lettering principles, techniques and functions, and discusses the traditions and historical development of letters. Fall term: Roman alphabet, lower and upper case. Winter term: Italic alphabet, lower and upper case. Spring term: Carolingian and uncial alphabet styles. Each term may be taken once for a maximum of six credits. Audit available.

ART 220 Advanced Lettering and Seminar 2.00 Basic calligraphic scripts studied in ART 218 are reviewed and a variety of additional styles studied. Layout and design principles are presented, and students work through the process of designing and completing both broadsides and commercial kinds of work. Students study the lettering techniques and shop practices necessary for actual production of calligraphic and drawn letters on a commercial basis. Work involves problem-solving activities the professional calligrapher is likely to encounter on the job. May be taken three times for credit. Audit available.

ART 231 Drawing 3.00 Deepens basic perceptual drawing techniques and tools as well as the understanding of the language of drawing in historical and contemporary contexts. Further develops critical skills for seeing, measuring, designing and constructing in drawing. May be taken three times for credit. Audit available.

ART 232 Life Drawing 3.00 Examines the human form through referencing professional models and applying various drawing processes and concepts. Develops understanding of the structure, form and proportions of the human figure in the context of composition, personal expression and an awareness of materials. May be taken three times for credit. Audit available.

ART 237 Life Drawing 3.00 Investigates drawing the human form through referencing professional models and applying various drawing processes and concepts. Develops understanding of the structure, form and proportions of the human figure in the context of composition, personal expression and an awareness of materials. May be taken three times for credit. Audit available.

ART 240 Digital Photography II 3.00 Explores the boundaries of digital photography to include a more personal practice while placing work within a historical, social and cultural context. Establishes critical skills necessary to expand perceptual and visual cultural awareness by using a broad range of intermediate digital processes and concepts. Initiates development of a professional photographic practice. Requires access to a camera with manual exposure controls, DSLR, (digital single-lens-reflex) cameras are preferred. Audit available.

ART 243 The Photographic Portfolio 3.00 Provides framework within which students may pursue their unique photographic vision. Explores role of photography in the arts, and rights and responsibilities of the photographer's work in black and white and/or color (color processed at student expense). May be taken three times. Prerequisite: ART 143. Audit available.

ART 248 Glass Casting 3.00 Provides an introductory but thorough studio experience investing the mechanics and design concerns necessary to make molds for glass casting and then casting in glass. Included is an overview of related processes and techniques and concepts that address historical and contemporary issues. Students will use a variety of techniques to develop and implement creative problem solving. Critiques, discussion, and presentations establish critical skills necessary to evaluate glass crafting, explore artistic intent, examine structural solutions, and expand perceptual awareness. Includes demonstrations, lectures, slides and audiovisual materials. May be taken three times for credit. Recommend: ART 117. Audit available.

ART 253 Ceramics I 3.00 Explores ceramic processes, techniques and concepts while addressing historical and contemporary issues. Develops and encourages creative problem solving by utilizing various ceramic techniques. Includes critiques, discussions, and ceramic presentations to establish critical skills necessary to evaluate ceramics, explore artistic intent, examine structural solutions, and expand perceptual awareness. This is the first course of a two-course sequence. May be taken three times for credit. Audit available.

ART 256 Ceramics II 3.00 Explores advanced ceramic processes. Develops and encourages creative problem solving by utilizing more advanced ceramic techniques (i.e. work on and off the potter’s wheel, glazed and firing procedures). Refines critical skills necessary to evaluate ceramics through critiques, discussions, and ceramic presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of ceramics. This is the second of a two course sequence. Prerequisite: ART 253. May be taken up to three times for credit. Audit available.

ART 270 Printmaking II 3.00 Explores advanced printmaking processes, techniques, and concepts while addressing historical and contemporary issues. Develops creative problem solving by utilizing monoprints, relief and basic intaglio processes. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the first course of a two-course sequence. Recommended: ART 115, 116 and 131. May be taken three times for credit. Audit available.

ART 271 Printmaking I 3.00 Explores advanced printmaking techniques (e.g. sugar lift, color, glazes) and other intaglio processes (e.g. folio sets and books) while addressing historical and contemporary issues. Develops creative problem solving by utilizing monotypes, color relief, and advanced intaglio processes to create a print. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. May be taken up to three times for credit. Prerequisite: ART 270. Audit available.

ART 277 Life Painting 3.00 Examines the human form through the study and painting of live professional models. Applies various painting techniques and concepts and as students learn the structure, form and proportions of the human figure. Emphasizes personal artistic development with attention to compositional organization. May be taken three times for credit. Prerequisite: Art 181 and Art 281. Audit available.

ART 279 Experimental Media 3.00 Students introduced to and explore ways of seeing and creating that acknowledge personal artistic intentions. Studio experience examines various 2-D and 3-D experimental media and processes used to develop and encourage creative problem solving. The conceptual framework for critical analysis is structured with regard to con-
ART 281 Painting II 3.00 Explores ways of seeing and elaborates on basic painting techniques, materials, and concepts while addressing historical and contemporary issues. Presents a conceptual framework for critical analysis along with basic art theory. May be taken three times for credit. Recommend: Art 116 and Art 181. Audit available.

ART 284 Watercolor I 3.00 Explores basic studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with basic art theory. May be taken three times for credit. Recommended: Art 131. Audit available.

ART 287 Watercolor II 3.00 Explores basic and more advanced studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with basic art theory. May be taken three times for credit. Prerequisite: ART 284 or instructor permission. Audit available.

ART 290 Sculpture: Plaster/Clay 3.00 Explores sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops creative problem solving skills through making sculpture using a variety of techniques for clay and plaster (including but not limited to: molds making, casting, and direct construction over armatures). Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. May be taken three times for credit. Recommend: Art 117. Audit available.

ART 291 Sculpture: Carving 3.00 Explores sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops creative problem solving skills through making sculpture using a variety of techniques associated with the reductive process of carving to make sculpture. Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. May be taken three times for credit. Recommend: Art 117, Art 290. Audit available.

ART 292 Sculpture: Mixed Media 3.00 Explores sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops creative problem solving skills through making sculptures using a variety of mixed media techniques. Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. May be taken three times for credit. Recommend: Art 117, Art 290, Art 293. Audit available.

ART 293 Figure Sculpture 3.00 Explores sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues relating to figure sculpture. Develops creative problem solving skills through making figurative sculpture based on the study of the human form from professional models, nude and clothed. Applies various sculpting techniques and concepts to the study of the structure, form, and proportions of the human figure. Establishes critical skills necessary to evaluate figure sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. May be taken three times for credit. Recommend: Art 117, Art 290. Audit available.

ART 294 Sculpture: Metals 3.00 Explores sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops creative problem solving skills through making sculptures with various metal working techniques (including but not limited to: welding, cold connections, forming and finishing). Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. May be taken three times for credit. Recommend: Art 117, Art 290, Art 292. Audit available.

ASL 101 First Year American Sign Language I 4.00 Introduction to ASL stressing the development of expressive skill, receptive skill, and cultural awareness through a communication approach. Primary emphasis on the student’s active use of the language. Emphasizes active conversational competence in ASL. Includes visual readiness skills, vocabulary, culture and grammar used for meeting communication needs. Proficiency target level: Novice high. For beginners.

ASL 102 First Year American Sign Language II 4.00 Continues work of ASL 101, further developing all skills. Primary emphasis on the student’s active communication in ASL. Includes grammar and culture information. Proficiency target level: Intermediate low. Prerequisite: ASL 101 or ASL 105 or Sign Language Proficiency Interview through Sign Language Interpretation Program (call SLIP office for an appointment). Prerequisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ASL 103 First Year American Sign Language III 4.00 Continues work of ASL 102, further developing all skills. Primary emphasis on the student’s active communication in ASL. Includes grammar and culture information. Proficiency target level: Intermediate low. Prerequisite: ASL 102 or Sign Language Proficiency Interview through Sign Language Interpretation Program (call SLIP office for an appointment). Prerequisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ASL 150 Accelerated American Sign Language 6.00 Covers the material of half of ASL 101 and half of ASL 102 in an accelerated format. Emphasizes active conversational competence in ASL. Includes visual readiness skills, vocabulary, culture and grammar used for meeting communication needs. Recommended to the highly motivated student. Proficiency target level: Intermediate low.

ASL 151 Accelerated American Sign Language 6.00 Covers the material of half of ASL 102 and ASL 103 in an accelerated format. Emphasizes active communication in ASL. Proficiency target level: Intermediate High. Sign Language Proficiency Interview may be required. Prerequisite: ASL 102 or ASL 150. Prerequisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ASL 201 Second Year American Sign Language IV 4.00 First term of a three-term sequence that continues the work of first year ASL. Reviews, expanding, and perfecting expressive skill, structure, and vocabulary for the purpose of active communication. Proficiency target level: Intermediate Mid. Sign Language Proficiency Interview may be required. Prerequisite: ASL 103 or ASL 151. Prerequisite course must have been completed within one year of class enrollment; Sign Language Proficiency Interview within one term.

ASL 202 Second Year American Sign Language V 4.00 Second term of a three-term sequence that continues the work of ASL 201. Continues reviewing, expanding, and perfecting expressive skill, structure, and vocabulary for the purpose of active communication. Proficiency target level: Advanced Low. Sign Language Proficiency Interview may be required. Prerequisite: ASL 201 or ASL 250. Prerequisite course must have been completed within one year of class enrollment; Sign Language Proficiency Interview within one term.

ASL 203 Second Year American Sign Language VI 4.00 Third term of a three-term sequence that continues the work of ASL 202. Emphasizes active communication in ASL. Emphasizes ASL narratives, ASL storytelling, and other topics. Proficiency target level: Advanced Mid. Sign Language Proficiency Interview may be required. Prerequisite: ASL 202 or ASL 250. Prerequisite course must have been completed within one year of class enrollment; Sign Language Proficiency Interview within one term.

ASL 210 American Sign Language Litera-
COURSE DESCRIPTIONS

ATH 101 Introduction to Physical Anthropology 4.00 Emphasizes skills for generation of ASL literature including: ASL narratives, ASL storytelling, ASL poetry, ASL artistry, and other topics. Proficiency target level: Advanced/High. Sign Language Proficiency Interview may be required. Prerequisite: ASL 202 or ASL 250. Prerequisite course must have been completed within one year of class enrollment; and Sign Language Proficiency Interview within one term.

ASL 240 Deaf Studies 4.00 Introduces pathological and cultural perspectives of Deaf people and their community; Deaf history and organizations; Deaf people's involvement in and access to the arts; and perspectives on education. Covers services, employment, legislation, special technology, communication systems and attitudes toward languages and their impact on the Deaf community. Introduces basic terminology and explains the difference between signers and interpreters. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ASL 250 Accelerated American Sign Language 6.00 First term of a two-term sequence that covers the material of ASL 201 and half of ASL 202 to continue the work of first year ASL in an accelerated format. Reviewing, expanding, and perfecting expressive skill, structure, and vocabulary for the purpose of active communication. Proficiency target level: Intermediate High. Sign Language Proficiency Interview may be required. Prerequisite: ASL 103 or ASL 151. Prerequisite course must have been completed within one year of class enrollment; and Sign Language Proficiency Interview within one term.

ASL 251 Accelerated American Sign Language 6.00 Second term of a two-term sequence that covers the material of half of ASL 202 and ASL 203 to continue the work of ASL 250 in an accelerated format. Emphasizes active communication in ASL. Emphasizes ASL narratives, ASL storytelling, and other topics. Proficiency target level: Advanced Mid. Sign Language Proficiency Interview may be required. Prerequisite: ASL 202 or ASL 250. Prerequisite course must have been completed within one year of class enrollment; and Sign Language Proficiency Interview within one term.

ATH 102 Introduction to Archaeology and Prehistory 4.00 Introduces methods and techniques used by archaeologists to study the development of human culture. Provides a survey of world prehistory, while emphasizing the development of social complexity and the origins of agriculture that precede both new and old world civilizations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 103 Introduction to Cultural Anthropology 4.00 Examines modern human cultures. Analyzes a variety of ethnographic examples from various world societies to understand the diverse aspects of language, technology, economy, social structure, governance, religion, world views and expressive aspects of life. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 207 Cultural Anthropology: Culture Concepts 4.00 Examines different schools of anthropological thought and the concept of culture from a historical perspective. Emphasis placed upon the importance of culture in explaining similarities and differences in our evolving world system. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 208 Cultural Anthropology: Cultures of the World 4.00 Introduces ethnographic descriptions of a representative sample of the cultural variations among contemporary peoples. Compares various subsistence systems and levels of socio-political integration. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 209 Cultural Anthropology: Cultural Growth & Change 4.00 Examines processes of cultural growth and change, the development of contemporary anthropological theory and the rapidly growing fields within applied anthropology. Ethnographic techniques presented so students may use them to examine the changing culture of our complex society. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 210 Selected Topics Ethnology: 4.00 Introduces life styles and interactions with their environments of peoples in a selected part of the world. Uses ethnographic and other information for concentrated study of the cultural diversity and environmental adaptations of those peoples. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 211 Selected Topics in Anthropology 4.00 Focuses on a specific anthropological topic and explores it in detail. Topics are drawn from the four sub-fields of anthropology and provide an in depth examination and analysis of the chosen subject. Topic specific theories and methods also highlighted. Audit available.

ATH 212 Introduction to Shamanism 4.00 Examines shamanism as it is practiced in various cultures around the world. Students will be introduced to the shamanic cosmologies, values and world views of different tribal societies and use participant-observation to explore different styles of shamanic journeying. Core shamanism and the interface of shamanism and modern medicine and psychotherapy will be explored. Prerequisite: WR 121 and MTH 20 or equivalent placement test scores, and ATH 103 or instructor permission. Audit available.

ATH 214 Human Environments: Ecological Aspects 4.00 Examines ecological relationships between human societies and their natural environments. Clarifies the human's biological relatedness to the world's natural ecosystems and then presents a look at the ensuing disruptions in nature and in human cultures. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 230 Native Americans of Oregon 4.00 Presents the history of anthropological research and the prehistory, languages and culture areas of Oregon's native peoples. Individual native groups are studied to better depict the life ways of Oregon's major cultural and geographic divisions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 231 Native Americans of the Northwest 4.00 An in-depth survey of the native peoples of Oregon, Washington, Alaska, and Southwest Canada. Individual native groups are studied to depict cultural variation within the region. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 232 Native North Americans 4.00 Surveys anthropology and distribution of the native North American peoples. Presents history of anthropological research and the prehistory, languages and culture areas of native North America. Specific native groups will be surveyed to better depict the life ways of the major cultural and geographic divisions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ATH 234 Death: Crosscultural Perspectives 4.00 An interdisciplinary study into cross-cultural variations regarding human responses to death and the differing cosmological implications these suggest. Death, a cultural universal, is addressed in its diversity from both anthropological and sociological perspectives. The subject of death as experienced by several major regions and cultures of the world is explored, including Asia, India, Bali, Middle East, Melanesia and Native American; historical trends in Western Europe and Americas are assessed regarding the evolution of contemporary perspectives on mortality. ATH 234 and SOC 234 cannot both be taken for credit. Recommend: A course in Anthropology or Sociology. Audit available.

ATH 235 Survey of Prehistoric Mexico and Central America 4.00 Study of the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 298 Independent Study: Anthropology 3.00 Individualized, advanced study in areas of
COURSE DESCRIPTIONS

AVIATION SCIENCE

AVS 107 Flight Preparation Lab Level 1 1.00 Provides an opportunity for practice and preparation in knowledge and skills that are directly related to Aviation Science 100-level airplane or helicopter flight courses. Areas covered include weather, flight planning, maneuvers, weight and balance, aircraft performance and lesson preparation techniques. Students must be enrolled in this class if they are working towards completion of a flight course.

AVS 110 Helicopter Private Pilot Ground School 4.00 Covers fundamentals of flight, helicopter systems, aeronautical publications, Federal Aviation Regulations, navigation, flight planning, radio procedures and weather. Presents sufficient knowledge to prepare for the FAA Private Pilot knowledge test. Audit available.

AVS 111 Helicopter: Pre-Solo 2.00 Introduces basic and emergency helicopter maneuvers necessary for flight in the local area. Prepares the student for their first local solo flights. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 111, 112, 113 sequence is an alternative equivalent to AVS 115. Coreq: AVS 107 and AVS 110. Prerequisite: MTH 60, WR 115 and AVS 117.

AVS 120 Airplane: Private Pilot Ground School 4.00 Covers fundamentals of flight, aeronautical publications, Federal Aviation Regulations, navigation, flight planning, radio procedures and weather. Presents sufficient knowledge to prepare for the FAA Private Pilot knowledge test. Open to the general public. Audit available.

AVS 121 Airplane: Pre-Solo Flight 2.00 Introduces basic airplane handling, emergency procedures and local flight operations. Students who successfully complete this course will conduct their first local solo flight as part of the course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to AVS 125. Coreq: AVS 107 and AVS 120. Prerequisite: MTH 60, WR 115 and AVS 127.

AVS 122 Airplane: Pre-Cross-Country Flight 1.00 Introduces planning and flight skills and procedures appropriate to cross-country and night flight. Includes some training by reference to instruments. Students who successfully complete this course will conduct their first cross-country flight as part of the course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to AVS 125. Coreq: AVS 107. Prerequisite: AVS 121.

AVS 123 Airplane: Cross-Country/Test Prep 1.00 Student completes the cross-country requirements, including the long solo cross-country flight, and prepares to take the FAA practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to AVS 125. Coreq: AVS 107. Prerequisite: AVS 122.

AVS 125 Airplane: Private Pilot Flight 4.00 Familiarizes student with operation of single engine aircraft. Fundamentals of flight, air traffic control and operational procedures are explored. Preparers student for the FAA Private Pilot Airplane practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to this course. Coreq: AVS 107 and AVS 120. Prerequisite: MTH 60, WR 115 and AVS 127.

AVS 127 Introduction to Aviation 4.00 Examines aviation from early flight to future potentials. Introduces career opportunities in all fields of aviation and outlines career advancement possibilities. Provides general overview of pilot certificates and ratings and training aircraft used. May include visits to area aviation facilities. Open to the general public. Audit available.

AVS 130 Instrument Ground School 4.00 Covers fundamentals of instrument flight planning, use of flight and navigation instrumentation, air traffic control procedures, radio navigation systems including the concepts of instrument flight. Presents sufficient knowledge to prepare for the FAA Instrument Rating knowledge test. NOTE: Course not recommended without prior flight experience. Prerequisite: AVS 120. Audit available.

AVS 131 Airplane: Instrument Attitude/Navigation 1.00 Develops basic attitude instrument flying skills and radio navigation techniques as well as holding patterns. Students will fly in the airplane and in a simulator. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 131, 132, 133 sequence is an alternative equivalent to AVS 135. Co-reg: AVS 107 and AVS 130. Prerequisite: AVS 123 or AVS 125.

AVS 132 Airplane: Instrument Approaches 1.00 Develops knowledge of procedures relating to the departure and terminal phase of an instrument flight. Students will fly in the airplane and in a simulator. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 131, 132, 133 sequence is an alternative equivalent to AVS 135. Coreq: AVS 107. Prerequisite: AVS 131.

AVS 133 Airplane: Instrument Cross-Country 1.00 Develops knowledge of cross-country flight planning under Instrument Flight Rules. Covers lost-comm procedures. Includes preparation for the FAA practical test. Students will fly in the airplane and in a simulator. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 131, 132, 133 sequence is an alternative equivalent to AVS 135. Coreq: AVS 107. Prerequisite: AVS 132.

AVS 135 Airplane: Instrument Flight 3.00 Receive training in instrument flight operations including basic attitude instrument skills, radio navigation, departure and approach procedures and instrument cross-country planning and flying. Prepares student for the FAA Instrument Rating - Airplane practical test. The AVS 131, 132, 133 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 125 or AVS 123. Coreq: AVS 107 and AVS 130.

AVS 137 Applied Aerodynamics 4.00 Introduces aerodynamics. Explores various concepts and theories relevant to modern aviation. Open to the general public (no math prerequisite.) Audit available.

AVS 140 Airplane: Commercial Pilot
Ground 4.00 Covers advanced concepts of flight maneuvers, Federal Aviation Regulations, weight and balance, and other aeronautical skill topics. Presents sufficient knowledge to prepare for the FAA Commercial pilot knowledge test. Prerequisite: AVS 130. Audit available.

AVS 141 Airplane: Commercial XC/Night Intro 1.00 Includes both day and night cross-country instruction as well as local and cross-country solo night flights. Emphasis is on commercial standards for planning, judgment and flying long distances during day and night visual conditions. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to AVS 145. Coreq: AVS 107 and AVS 140. Prerequisite: AVS 133.

AVS 142 Airplane: Commercial XC Exploration 1.00 Provides the opportunity to build confidence in solo VFR cross-country planning and flying skills in a variety of terrain environments farther from the base of training. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to AVS 145. Coreq: AVS 107. Prerequisite: AVS 141.

AVS 143 Airplane: Commercial Precision XC 1.00 Focuses on increasing cross-country flying skills to Commercial Pilot standards. Emphasis will be on maintaining accurate course and arrival times while simultaneously maintaining situational awareness and make safe decisions. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to AVS 145. Coreq: AVS 107. Prerequisite: AVS 142.

AVS 145 Introduction to Commercial Airplane 3.00 Begins commercial pilot training activities and includes cross-country flight operations and a review of previous items learned during private pilot training. Students will learn how to plan and execute a cross-country flight as a commercial pilot. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to this course. Prerequisites: AVS 135 or AVS 133, Coreq: AVS 107 and AVS 140.

AVS 150 Helicopter: Commercial Ground 3.00 In depth study of aerodynamics systems, performance, aeronautical charts, regulations, and flight maneuvers all relating specifically to helicopters. Presents sufficient knowledge to prepare for the FAA Commercial Pilot Rotorcraft helicopter written test. Audit available.

AVS 151 Helicopter: Commercial XC 1.00 Provides the opportunity for the student to build confidence in solo and cross-country operations and fulfill the cross-country requirements for the Commercial certificate. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 151, 152, 153 sequence is an alternative equivalent to AVS 155. Coreq: AVS 107 and AVS 150. Prerequisite: AVS 113.

AVS 152 Helicopter: Intro to Comm Basic 1.00 Introduces basic maneuvers required for the Commercial certificate. Includes solo lessons during which the student will review Private maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 151, 152, 153 sequence is an alternative equivalent to AVS 155. Coreq: AVS 107. Prerequisite: AVS 113.

AVS 153 Helicopter: Commercial Basic Practice 1.00 Provides the opportunity for additional instruction in the basic commercial maneuvers as well as additional solo practice. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 151, 152, 153 sequence is an alternative equivalent to AVS 155. Coreq: AVS 107. Prerequisite: AVS 152.

AVS 155 Helicopter: Introduction to Commercial Flight 3.00 Begins the commercial pilot training activities. Cross-country flight procedures and emergency maneuvers are the focus. Students must hold a private pilot certificate prior to enrollment. The AVS 151, 152, 153 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 115 or AVS 113, Coreq: AVS 107 and AVS 150.

AVS 156 Helicopter Basic Commercial w/Instrument 4.00 Introduces commercial pilot training activities and training for the Instrument rating. Includes cross-country flight procedures, emergency procedures and procedures for flight by reference to instruments as well as training in basic commercial maneuvers. Students must hold a private pilot certificate prior to enrollment. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 115, Coreq: AVS 107 and AVS 130.

AVS 157 Aircraft Systems & Structures I: Airframe 3.00 Designed to give students the background in aircraft systems and structures, with an emphasis on airframe components, that will enable them to progress into more advanced aircraft. Provides understanding of the safe and efficient operation of aircraft systems. Prior flight experience recommended. Audit available.

AVS 167 Aircraft Systems: Powerplant 3.00 Designed to give students the background in aircraft systems and structures, with an emphasis on powerplant components, that will enable them to progress into more advanced aircraft. Provides understanding of the safe and efficient operation of aircraft systems. Prior flight experience recommended. Audit available.

AVS 205 Helicopter: Commercial Flight A 3.00 Continues the Commercial Pilot Rotorcraft Helicopter training activities and includes cross-country flight operations and a review of previous items learned during the introduction to Commercial Pilot training. Increase knowledge about efficiently planning and executing cross-country flights as well as off airport operations required for commercial pilots. Does not include training for the instrument rating. The AVS 211, 213, 214 sequence is an alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 153 or AVS 155. Coreq: AVS 207.

AVS 207 Flight Preparation Lab Level 2 1.00 Provides an opportunity for practice and preparation in knowledge and skills that are directly related to Aviation Science 200-level airplane or helicopter flight courses. Areas covered include weather, flight planning, maneuvers, weight and balance, aircraft performance and lesson preparation techniques. Students must be enrolled in this class if they are working towards completion of a flight course.

AVS 211 Helicopter: Instrument Intro 1.00 Introduces flight solely by reference to instrument and fulfills the instrument flight requirement for the commercial practical test. Also includes the opportunity for solo practice of VFR maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215 (without AVS 212 the sequence is equivalent to AVS 205). Coreq: AVS 207. Prerequisite: AVS 154.

AVS 212 Helicopter: Instrument Procedures 1.00 Holding patterns and approach procedures are introduced and practiced in the simulator. Training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215. Coreq: AVS 207 and AVS 130. Prerequisite: AVS 211.

AVS 213 Helicopter: Advanced Commercial 1.00 Provides both flight instruction in commercial maneuvers and solo practice of maneuvers required for the commercial certificate. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215. (without AVS 112 the sequence is equivalent to AVS 205). Coreq: AVS 207. Prerequisite: AVS 211.
AVS 214 Helicopter: Commercial Test Prep 1.00 Preparation to take the FAA Commercial practical test. Includes night solo requirements. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an equivalent alternative to AVS 215 (without AVS 212 the sequence is equivalent to AVS 206). Coreq: AVS 207. Prerequisite: AVS 213.

AVS 215 Helicopter: Commercial Flight B 4.00 Continues the Commercial Pilot Rotorcraft Helicopter training activities and includes cross-country flight operations and a review of previous items learned during the introduction to Commercial Pilot training. Increases knowledge about efficiently planning and executing cross-country flights as well as off airport operations required for commercial pilots. Includes training for the instrument rating. The AVS 211, 212, 213, 214 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 153 or AVS 155. Coreq: AVS 207.

AVS 216 Helicopter Advanced Commercial 5.00 Continues the Commercial Pilot Rotorcraft Helicopter training activities. Includes review of previous items learned as well as advanced commercial maneuvers. Includes training focused on specialty commercial operations appropriate to the desired career. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 155. Coreq: AVS 207 and AVS-150.

AVS 221 Airplane: Complex Airplanes 1.00 Introduction to the operation of single-engine airplanes with retractable landing gear and constant-speed propellers. Emphasis on checklist usage and systems management. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 143 or AVS 145.

AVS 222 Airplane: Commercial Maneuvers 1.00 Introduces the precision flight maneuvers required to be performed during the commercial practical test. Emphasis is on accurate procedures and safe practicing techniques. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 221.

AVS 223 Airplane: Commercial Proficiency 1.00 Preparation to take the Commercial Pilot Single-Engine-Land practical test. Emphasis is on safety, procedural discipline, smoothness and precision in all required maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 221.

AVS 224 Airplane: Multi-Engine 1.00 Introduces and develops proficiency in flying multi-engine airplanes in both VFR and IFR operations. Prepares the student to take the Commercial Multi-Engine-Land practical test. Includes preparation work in simulators. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 223.

AVS 225 Airplane: Commercial Flight 4.00 Concludes commercial pilot training activities and includes complex flight operations, multi-engine operations, advanced systems and performance maneuvers. Students will be prepared to take the Commercial Pilot single-engine land practical test and the multi-engine land additional class rating practical test upon successful completion of the course. The AVS 221, 222, 223, 224 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 143 or AVS 145. Co-requisite: AVS 207.

AVS 227 Aviation Careers 4.00 Designed to prepare students for a career in aviation. Explores aviation employment opportunities. Includes interview and resume preparation. Intended for second year AVS students. Audit available.

AVS 230 Airplane: Flight Instructor Ground 4.00 Includes flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 140. Audit available.

AVS 231 Airplane: CFI Intro 1.00 Introduction to flight from the right (instructor) seat and basic critique and analysis. Maneuvers from the Private and Commercial Practical Test Standards will be practiced. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232 sequence is an alternative equivalent to AVS 235. Coreq: AVS 207 and AVS 230. Prerequisite: AVS 224.

AVS 232 Airplane: CFI Test Prep 1.00 Preparation for the Certified Flight Instructor practical test. Focus is on both teaching techniques and performance of the required maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232, sequence is an alternative equivalent to AVS 235. Coreq: AVS 207. Prerequisite: AVS 231.

AVS 235 Airplane: Flight Instructor Flight 2.00 Provides a structured environment to learn to fly the aircraft from the instructor’s seat. Learn to explain, demonstrate and to assess flight performance. Prepares students for the FAA Flight Instructor practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232 sequence is an equivalent alternative to this course. Prerequisites: AVS 224 or AVS 225. Corequisite: AVS 207 and AVS 230.

AVS 237 Aviation Law and Regulations 4.00 Explores the applicable Federal Aviation Regulations through case law and current events. The FAA’s role in the development and regulation of the industry is examined. Covers how to reference, interpret and explain aviation law and regulations. Audit available.

AVS 240 Airplane: CFII/MEI Ground 3.00 Includes Instrument and Multi-Engine subject areas for a Flight Instructor certificate. Presents sufficient knowledge to prepare for the Certified Flight Instructor Instrument knowledge test. Prerequisite: AVS 230.

AVS 241 Airplane: CFII/Ground/Flight 1.00 Includes subject areas for an Instrument Airplane rating on a Flight Instructor certificate. Presents sufficient knowledge to prepare for the Certified Flight Instructor - Instrument knowledge test. Prepares students to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor - Instrument practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 230, AVS 235, and FAA Commercial Pilot Certificate with Instrument Rating. CFI certificate. Co-requisite: AVS 207.

AVS 242 Airplane: MEI/Ground/Flight 1.00 Includes subject areas for Multi-Engine Airplane rating on a Flight Instructor certificate. Prepares student to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor - Multi-Engine practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 230, 235, and FAA Commercial Pilot Certificate with Instrument, CFI ratings. Co-requisite: AVS 207.

AVS 245 Airplane: CFII/MEI Flight 2.00 Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor Instrument and Multi-Engine practical test. Prerequisites: AVS 235 and FAA Commercial Pilot Certificate with Instrument, CFI ratings. Corequisite: AVS 240.

AVS 255 Airplane: Pilot Performance 1.00 Designed to expose students to Cockpit Resource Management. Focuses on workload management and check list usage. Flight training fees apply and cover
a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 225 and FAA Commercial Pilot Certificate with Multi-engine Land and Instrument rating. Co-requisite: AVS 207.

**AVS 260 Helicopter: CFI Ground 4.00**

Includes flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 150. Audit available.

**AVS 261 Helicopter: Intro to CFI 1.00**

Introduction to flight from the left (instructor) seat and basic critique and analysis. Maneuvers from the Private and Commercial Practical Test Standards will be practiced. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 261, 262, 263 sequence is an alternative equivalent to AVS 265. Coreq: AVS 207 and AVS 260. Prerequisite: AVS 205 or AVS 214 or AVS 215.

**AVS 262 Helicopter: CFI Development 1.00**

Focuses on providing effective instruction in maneuvers from the helicopter private and commercial syllabi to practical test standards. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 261, 262, 263 sequence is an alternative equivalent to AVS 265. Coreq: AVS 207. Prerequisite: AVS 261.

**AVS 263 Helicopter: CFI Test Prep 1.00**

Preparation for the FAA practical test for the Flight Instructor certificate. Increases proficiency in all applicable flight maneuvers including full-down autorotation. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 261, 262, 263 sequence is an alternative equivalent to AVS 265. Coreq: AVS 207. Prerequisite: AVS 262.

**AVS 265 Helicopter: CFI Flight 3.00**

Provides a structured environment to learn to fly the helicopter from the instructor's seat. Learn to explain, demonstrate and to assess flight performance. Prepares students for the FAA Flight Instructor practical test. The AVS 261, 262, 263 sequence is an alternative equivalent to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 205 or 214 or 215. Co-requisites: AVS 207, AVS 260.

**AVS 267 Economics of Flight Operations 4.00**

Examines management philosophies and accounting procedures as they apply to general aviation. Includes business aspects of maintaining and flying aircraft, operating airport facilities, and managing passenger/cargo activities. Guest speakers from the industry may be featured. Audit available.

**AVS 275 Airplane: Professional Pilot 3.00**

Provides further post-commercial instruction and PIC flight time in single and multi-engine aircraft for those not selecting the flight instructor option. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 225 and FAA Commercial Pilot Certificate with Instrument rating. Co-requisite: AVS 207.

**BUSINESS ADMINISTRATION**

**BA 98 Business Administration: Skills and Issues 1.00**

Increases academic skills and deepens understanding of business administration as a discipline while supporting work performed in BA 101. Includes 1) a tutorial relating to course concepts and content, 2) academic skill building, including discipline-specific vocabulary, concepts, study skills, investigative techniques, and research mechanics, and 3) a brief community-related learning project to allow for direct application of learning. The overarching goal is to develop a deeper understanding of business practices. Corequisite: BA 101. Audit available.

**BA 101 Introduction to Business 4.00**

Survey course in the field of business including topics such as management, finance accounting, marketing, production, computers, international business, small business, investments and other areas of general business interest. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 111 Introduction to Accounting 3.00**

Presents double-entry accounting as related to service and merchandising business. Covers accounting cycle, including journalizing, posting to the general ledger, preparation of financial statements, petty cash, bank reconciliations, combined journal, special journals and payroll. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 113 Business Credit Principles 3.00**

Introduces credit basics, the function of credit in our economy, credit granting concepts, credit reporting, and credit management procedures, with the goal to minimize bad debt losses and maximize sales volume. Recommend: BA 101. Audit available.

**BA 114 Financial Survival 1.00**

Provides basic information and strategies to empower individuals to make positive decisions about funding their education and establishing control over their financial lives, leading to financial independence and reduced life stress. Topics include student financial aid and funding college, budgeting, wise use of credit, controlling debt, basic financial planning, effective financial decision making, and avoiding financial mistakes and pitfalls. BA 114 and CG 114 cannot both be taken for credit. Prerequisite: WR 90, RD 90, and MTH 20 or equivalent placement test scores. Audit available.

**BA 131 Computers in Business 4.00**

Course in computer literacy that covers computer concepts and typical activities computers are used for in business. Includes introduction to hardware and software, operating systems, word processing, spreadsheet, database and electronic mail. Appreciate the value of ethical conduct in a business/computer environment. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 141 Introduction to International Business Law 3.00**

Surveys international aspects of traditional business law subjects (sales, commercial paper, corporate law, agency, etc.) and related subjects (antitrust law, administrative law, trade regulation, etc.). Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 177 Payroll Accounting 3.00**

Learn fundamental skills and basic knowledge in the area of business payroll. The focus of the course is primarily in the following areas: payroll and personnel record keeping, calculation of gross pay using various methods, calculation of Social Security and Medicare taxes, calculation of federal and state income taxes, calculation of federal and state unemployment taxes, journalizing and posting payroll entries, and completing various federal and state forms. Prerequisites: BA 111 Introduction to Accounting or BA 211 or instructor permission. Recommended: MTH 30 Business Mathematics, and Microcomputer experience. Audit available.

**BA 203 Introduction to International Business 3.00**

Explores processes of international trade, whether the company is an importer, exporter, or a multinational firm. Forms a basis for further study and specialization in the international business field. Prerequisite: WR 115, RD 115, and MTH20 or equivalent placement test scores. Audit available.

**BA 205 Solving Communication Problems with Technology 4.00**

Focuses on using current technology to create, revise, and design business documents: letters, memos, e-mail, reports, minutes, simple instructions, and resumes. Students will use library and Internet resources to collect information. In addition, students will deliver oral presentations using presentation tools. Recommended: WR 121, BA 131, CAS 133, or computer literacy. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 206 Management Fundamentals 3.00**

Introduces business management theory, including the basic functions of planning, organizing, directing, leading, and controlling as well as factors contributing to change in current management approaches. Recommended: BA 101, Introduction to Business. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.
BA 207 Introduction to E-Commerce 4.00
Presents concepts and skills for the strategic use of e-commerce and related information technology from three perspectives: business to consumer, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how it affects business processes including electronic transactions, supply chains, decision making and organizational performance. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 208 Introduction to Nonprofits & Philanthropy 4.00
Surveys the role of the nonprofit and voluntary organizations in American society including the history, theory and challenges of the third sector. Includes the Students4Giving service learning project where students serve as philanthropists to their local community. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Recommended: BA 101. Audit available.

BA 210 Advanced Accounting Spreadsheet Application 3.00
Presents the advanced functions of electronic spreadsheets as related to the accounting profession. Also applies to finance, marketing, operations, and other business occupations. Recommended: CAS 170 or BA 111 or BA 211. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 211 Principles of Accounting I 3.00
Introduces financial accounting theory, including the accounting cycle, analysis and recording of transactions, and reporting financial information in accordance with generally accepted accounting principles. Recommended: MTH 60 and BA 111. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 212 Principles of Accounting II 3.00
Continues the presentation of fundamental issues begun in BA 211. Introduces statement of cash flows and financial statement analysis. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores; and BA 211. Audit available.

BA 213 Managerial Accounting 4.00
Covers accounting information from management perspective for planning, performance evaluation and for decision making purposes. Includes cost concepts, product costing, cost-volume-profit relationships, profit planning, variance analysis, responsibility accounting and capital budgeting. Prerequisite: BA 211. Audit available.

BA 215 Basic Cost Accounting 3.00
Covers cost accounting concepts, application, and techniques employed in the accumulation and reporting of manufacturing cost data. Particular attention shall be paid to job order costing, process costing, joint and by-product costing, standard costs, budgeting and analysis of variances. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores; and BA 211. Audit available.

BA 218 Personal Finance 3.00
Studies role of the consumer in our economy, problems of financing family and individual needs, including budgeting, banking relationships, charge accounts, installment buying, insurance, wills, real estate investing and personal taxes. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 222 Financial Management 3.00
Covers basic financial concepts and practices and includes analysis of company resources, types and sources of financing, forecasting and planning methods, and the roles of the money and capital markets. Recommended: BA 212, MTH 60. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 223 Principles of Marketing 4.00
Provides a general knowledge of marketing emphasizing marketing mix elements and target markets for consumer and industrial products, marketing strategies, consumer behavior, market planning and promotion. Recommended: BA 101. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BA 224 Human Resource Management 3.00
Attention is given to human behavior, employment, employee development, performance appraisal, wage and salary administration, employment and job rights, discipline and due process, and labor-management relations. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 226 Business Law I 4.00
Discusses fundamental concepts, principles, and rules of law that apply to business transactions. Includes the function and operation of the courts, business crimes, torts, contract law, intellectual property, the application of the Uniform Commercial Code to business activities and recent developments in business law, such as cyberlaw and electronic commerce. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BA 227 Business Law II 3.00
Discusses fundamental concepts, principles and rules of law that apply to business organizations. Includes agency, property law, sales transactions, partnerships, corporations and government regulations. Recommended: BA 226. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 228 Computer Accounting Applications 3.00
Introduces double-entry, fully integrated computerized general ledger software. Topics include general ledger, accounts receivable, accounts payable, payroll, fixed assets, bank reconciliations, and inventory. Recommended: BA 111 or BA 211 and CAS 133. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 234 International Marketing 3.00
Covers nature and concepts of international marketing including techniques for identifying potential markets and assessing uncontrollable elements such as economic, political and sociocultural environmental factors. International marketing strategies related to product/service, pricing, promotion and distribution are examined. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 237 Fundamentals of Import/Export 3.00
Examines motivations and procedures for the import and export of goods and services. Emphasizes U.S. import/export regulations, documentation, logistics, community resources and customer services. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 238 Sales 3.00
Offers a blend of practicality and theory on industrial, commercial and retail sales. Demonstrates and practices basic sales techniques, explores communication and motivation as they relate to selling and examine the function of sales relative to the total marketing program. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 240 Nonprofit Financial Management and Accounting 4.00
Develops conceptual foundation underlying the financial management and accounting procedures, records and statements for non-profit organizations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and BA 111 or BA 211 or equivalent. Audit available.

BA 242 Introduction to Investments 3.00
Study popular investment vehicles--what they are, how they can be utilized and the risk and return possibilities. Emphasizes stocks and bonds, mutual funds, options and real estate. Examines securities exchanges and the functions of the broker. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 244 Introduction to Records Management 3.00
Offers a study of the life cycle of records on all types of media from creation through disposition. Considers responsibilities of the records manager as they relate to each subsystem of the total records management program and to the needs of all types of organizations. Prerequisite: WR 115, RD 115, MTH 20 or equivalent placement test scores. Audit available.

BA 249 Principles of Retailing and E-tailing 3.00
Covers analyzing target market, developing retail marketing mix elements, and reviewing store planning techniques used by retailers. Includes discussions of changing retailing environment and
impact of government regulations. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 250 Small Business Management 3.00**

Designed for students and prospective small business owners and managers. It emphasizes the general functions, procedures, and specific subject areas related to initiating, organizing, and operating a successful small business. It specifically prepares the student to develop a business plan for opening a business. Recommended: BA 101. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**BA 251 Office Management 3.00**

Introduces organizing, planning, leading, and controlling functions of an office and the resulting role and responsibilities of the office manager. Recommended: BA 206. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores; and BA 101 or instructor permission. Audit available.

**BA 255 Project Management - Business Environments 4.00**

Showcases the evolving interpretation of project management by providing practical information useful to project managers from all disciplines. Discussion topics will include: integration, scope, time, cost, quality, human resource management, communication, risk, and procurement management. This course is one of the Project Management series that includes CAS 220, MSD 279, and CIS 245. Project management is a broad term that can include many areas of a business. Recommend: BA 101, MSD 279, BA 250, and CAS 220. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 256 Income Tax 3.00**

Introduces preparation of federal individual and sole proprietorship income tax returns. Provides brief overview of partnership and corporate returns. Audit available.

**BA 270 Global Business Management 3.00**

This course explores the contemporary issues and the unique challenges businesses face when moving into the int’l marketplace. The emphasis will be on the changing nature of firms doing business outside their national borders and learn how information technology and technological changes in our society have driven the globalization of products and markets. Recommend: BA 101, BA 203, and BA 234. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 280A Cooperative Education: Business Experience**

Offers relevant field experience in business environments in one of the following areas: bookkeeping, marketing, management, international business, advertising, banking, purchasing, investment, finance and customer services (sales or credit services). Allows exploration of career options. Course may be repeated for credit up to 12 credits. Prerequisite: Completion of 12 BA credits and department permission. Prerequisite/corequisite: BA 280B.

**BA 280B Cooperative Education: Business Experience - Seminar 1.00**

Supplements on-the-job experience through feedback sessions, instruction in job-related areas, and linkages to the student’s on-campus program. Co-requisite: BA 280A. Prerequisite: Department permission required.

**BA 285 Human Relations-Organizations 3.00**

Explores interactions in organizations by examining human perceptions, communications, small group dynamics and leadership. Includes dynamics of change, cultural diversity, substance abuse, work stress, ethics and social responsibility, and the challenges of globalization. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

**BA 9235 Financial Statement Analysis I 3.00**

Presents techniques used in financial statement analysis from credit manager’s perspective. Includes common-sizing, ratio analysis, and cash flow analysis. Recommended: BA 113. Audit available.

**BA 9703 Income Tax Preparation: Basic 8.00**

Elements of taxation. Meets the statutory educational requirements for those wishing to be licensed income tax preparers in Oregon. Audit available.

**BA 9706 Income Tax Preparation: Advanced 3.00**

Provides comprehensive review of federal individual income tax law for return preparers and consultants. Includes update of changes in current law. Qualifies for CPE credit. Audit available.

**BA 100 Overview to the Construction Industry 3.00**

Study of management functions in the construction industry. Planning and scheduling, project organization and communications, cost control, project and contract administration, and project close out. Basic construction industry operation knowledge, or instructor’s permission required. Audit available.

**BA 101 Principles of Construction Surveying 3.00**

Provides a collaborative learning framework in which learners practice the basic concepts of construction surveying. Includes set up and use of auto level, total station, leveling rod and steel tape. Also included are field note assembly and interpretation, and elevation and distance measuring techniques. Vertical and horizontal angle calculations are also covered. Includes grid method for generating contour maps. Prerequisite: Prior completion of BCT 104 or instructor permission. Audit available.

**BCT 102 Residential Printreading 3.00**

Provides a collaborative learning framework from the development of printreading skills relevant to residential building construction. Students will demonstrate an understanding of print reading by analyzing, interpreting, and measuring plans for relevant construction information, and by sketching scaled plans for peer and instructor evaluation. Work will be limited to residential prints. Audit available.

**BCT 103 Residential Materials and Methods 3.00**

Introduces function and performance characteristics of basic building materials, components, methods, and sequences in the construction process. Emphasizes residential construction. Audit available.

**BCT 104 Construction Math 3.00**

Provides a framework for learners to apply mathematical concepts and principles to building construction situations problems through collaborative learning. Learners will also develop, articulate and document their own problem solving strategies. Exploration of construction problems will be limited to light framing, concrete, finish carpentry and cabinetmaking. Prerequisite: Placement into MTH 20A or department approval. Audit available.

**BCT 105 Vectorworks for Constructors 3.00**

Learn to create 2D architectural working drawing using VectorWorks CAD based software. A building blocks approach will be used to help learners develop the skills and vocabulary necessary to generate their own working drawings. Suitable for both MAC and Windows operating systems. Recommended: Blueprint reading and basic computer skills. Audit available.

**BCT 106 Hand Tool/Power Tool Use and Safety 3.00**

Develops understanding of the hand tools and power tools used in the construction trades. Identifies commonly used hand/power tools, selecting the correct tool to complete assigned projects and working in a safe and competent manner. Emphasizes safety and care of tools. Audit available.

**BCT 108 Introduction to Building Science - Energy Efficient Housing 3.00**

Introduces students to the basic principles of building science in residential construction and the dynamic relationship between construction practices, material choices, physics and building operation. Critical topics include: energy and moisture transport in buildings, understanding building enclosures, comfort, building tightness and ventilation. Audit available.

**BCT 115 Introduction to Residential Greenroofing 1.00**

Provides a basic understanding of local residential greenroof design and installation. Covers greenroof benefits, best practices, material selections, and appropriate plantings; includes hands-on installation. Audit available.

**BCT 116 Alternative Building Design 3.00**

This course introduces students to natural green building principles used in the design and construction of alternative buildings such as straw bale, cob and...
rammed earth. Student team will develop designs by constructing scaled models, and will then prepare and deliver presentations that defend and promote their designs. Audit available.

**BCT 120 Floor Framing 3.00** Covers the basic floor framing systems and principles used in residential construction. Floor systems will be installed on foundations using current building construction methods. Learning will include floor leveling, sill plate installation, floor framing material identification, joist and beam lay-out, quantity take-offs, estimating and related codes. Prerequisite: BCT 106 or instructor permission. Audit available.

**BCT 121 Wall Framing 3.00** Covers basic residential wood wall framing methods and principles used in current residential construction. Content will include wall lay-out and assembly of studs, corners, partitions and openings. Includes material quantity take-offs, estimating and related codes. Structural sheathing, interior wall bracing, bay framing, window box, framing arched openings and stair construction will also be covered. Prerequisite: BCT 106 or instructor permission. Audit available.

**BCT 122 Roof Framing I 3.00** Course covers basic residential roof rafter framing. Content covers rafter math calculations for various roof slopes, lay-out, part nomenclature, assembly procedures, related codes and material take-off. Ceiling joist, collar ties, gable roof, gambrel roof and hip roof types will be covered. Prerequisites: BCT 104 and 106, or instructor permission. Audit available.

**BCT 123 Roof Framing II 3.00** Layout, cutting and assembly of hip, intersecting and unequal pitch roofs, and dormers. Discussions include truss roof assemblies. Prerequisite or concurrent enrollment: BCT 122. Audit available.

**BCT 127 Residential Concrete 6.00** Covers residential concrete construction, including layout, footings, foundation walls, slabs, stairs, and the handling and curing of concrete. Explore and use different forming methods and materials to erect a concrete foundation. Prerequisite: BCT 106 or instructor permission. Audit available.

**BCT 128 Exterior Finish 6.00** Course covers the installation, estimation of materials and labor of various exterior siding products. Includes construction of various horizontal lap, wood shingles and vertical sidings. Covers ceiling soffits, door, window and corner trim. Roofing covers composition, shake and shingle roofing. Prerequisites: BCT 106 or instructor permission. Audit available.

**BCT 129 Mechanical Planning for Kitchens and Baths 4.00** Covers electrical, plumbing, HVAC systems used in residential kitchens and baths. Students will become familiar with the code requirements and restrictions through the examination of remodeling case studies. Students will design general and task lighting systems for kitchens and baths. Audit available.

**BCT 130 Construction Safety 3.00** Requirements for safety on the job site, Occupational Safety and Health Act and other related regulations and legislation, accident prevention and hazard identification and procedures. Audit available.

**BCT 132 Computer Applications for Construction 3.00** Covers information generation, processing, distribution and utilization for the management of construction projects and construction companies. Emphasizes the design of the information process, the role of information technology in construction, software selection and the ongoing evaluation of the efficiency and effectiveness of the information process. Audit available.

**BCT 133 Commercial Materials and Methods 3.00** Materials and Methods used in commercial construction. Techniques and methods including building systems and assemblies. Audit available.

**BCT 134 Construction Scheduling 3.00** Methods of planning and scheduling construction projects. Emphasis on building and efficient use of construction schedules, including critical path method and resource and cost loading. Use of computer scheduling software to build and monitor schedules. Recommended: Basic knowledge of Microsoft Windows. Prerequisite: BCT 104 or instructor permission. Audit available.

**BCT 150 Mechanical, Electrical and Plumbing 4.00** Covers the principles and applications of mechanical and electrical components during the construction process and of constructed facilities; heating, ventilating, air conditioning, plumbing, fire protection, power, lighting, distribution systems, security systems and a review of the related codes. Audit available.

**BCT 202C Business Principles for Construction 3.00** Explores the fundamental business principles and practices used in managing a residential construction company. Includes establishing objectives in marketing, operations and finance, and the relationship between those business activities and the planning and management methods for achieving objectives. Presents the general legal requirements, accounting and record keeping practices. Audit available.

**BCT 202D Business Principles for Design/Build 3.00** Explores the fundamental business principles and practices used in managing a residential design-build construction company. Includes establishing objectives in marketing, operations and finance, and the relationship between those business activities and the planning and management methods for achieving objectives. Presents the general legal requirements, accounting and record keeping practices. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.
COURSE DESCRIPTIONS

BCT 213 Commercial Printreading 3.00
Commercial Printreading Covers typical commercial and civil construction plans and practices. Presents skills for print reading and applying knowledge to commercial construction projects. Prerequisite: BCT 102 or instructor permission based on industry experience in print reading. Audit available.

BCT 214 Advanced Construction Estimating 3.00
Advanced estimating for larger scale projects. Discussion of labor rates, specifications, budget estimating, assembly of bids bidding procedures, including use of computer estimating software. Prerequisite: BCT 204C or instructor permission. Audit available.

BCT 216 Cabinetry I 2.00
Focuses on materials, hardware and techniques used to build industry standard cabinetry. Covers productive uses and safe operation of hand and power tools as well as equipment and machinery used for the production of cabinetry. Generate shop drawing and subsequently machine, mill and assemble a cabinet complete with plastic laminate countertop. Audit available.

BCT 217 Cabinetry II 2.00
Covers more advanced forms of cabinet construction and joinery such as doweling, box joints, dovetail joints and lock shoulders. Machining and assembly of the five piece door will be covered. An instructor designed cabinet project will supply the frame work for learning experience. Prerequisite: BCT 216 or BCT 219. Audit available.

BCT 218 Woodworking Projects 2.00
Designed for independent work on cabinet projects. Students are required to present shop drawings for instructor approval before beginning. Students must supply their own materials. Instructor will evaluate student knowledge of hand and power tool safety at first class meeting to determine whether skill level is appropriate for independent work. Audit available.

BCT 219 Cabinetmaking I 6.00
Learners will become familiar with the skills, materials, hardware and equipment necessary to produce industry standard cabinets. Students will learn and demonstrate the safe use of cabinetmaking hand and power tools. Students will draw shop drawings and estimate materials for cabinetmaking jobs. Learners will develop cabinetmaking skills by constructing instructor designed cabinet projects. Audit available.

BCT 220 Cabinetmaking II 6.00
Expands on the data management, materials, hardware, outsourcing alternatives, equipment and techniques necessary to produce industry standard cabinetry covered in BCT 219. Includes cabinet construction using the 32mm system, and stile & rail door making. Cabinet installation methods for kitchens and baths are covered including room preparation, cabinet layout, cabinet storage, cabinet and countertop installation, appliance installation, and moldings. Kitchen and bath design skills will be developed by hand drafting assigned case studies. Prerequisite: BCT 219. Audit available.

BCT 221 Construction Law for the Contractor 3.00
Introduces basic principles of construction law used in managing construction contracts. Gain working knowledge of construction law principles through examination of case studies. Audit available.

BCT 222 Engineering for Constructors 3.00
Presents the fundamentals of analysis and design of residential construction to students with limited technical training. Investigation of basic contemporary structural systems in masonry, steel and wood framing systems will be used. Concepts such as determination of support forces, bending moments and shear, strengths and properties of materials, loads and dimensional properties are explored. Prerequisites: BCT 104, 102. Audit available.

BCT 223 Finished Stair Construction 3.00
Covers the construction and finish of interior staircases, including balustrades, handrails and guardrails. Emphasizes the materials and techniques used to construct finish stairs, relevant building codes, and methods used to estimate labor and materials associated with stair and rail construction. Prerequisites: BCT 106 or instructor permission. Audit available.

BCT 225 Construction Project Management 3.00
Study of management functions in construction industry. Planning and scheduling, project organization and communications, cost control, project and contract administration, and project close out. The instructional approach is based on the general contractor’s point of view, and the intent is to provide a good working knowledge of construction project management procedures. Audit available.

BCT 226 Finish Carpentry 2.00
Covers techniques and methods used to hang and install interior doors, install door hardware; measure, cut and install base trim, casing, crown molding wainscoting and various interior window trim treatments; and in plastic laminate countertop fabrication. Covers estimating techniques used to establish labor and material costs associated with finish carpentry. A student may not receive credit for both the BCT 223, 224 and 226 series and BCT 203. Audit available.

BCT 229 Introduction to Kitchens and Baths 2.00
Explores the history and trends of the kitchen and bath industry. Focuses on basic kitchen & bath layouts and specification of specialized equipment, materials and surfaces required for sale and functional kitchens & baths. Products include cabinet systems, appliances, equipment and surfacing materials. Students will complete basic kitchen and bath designs based on case studies. Prerequisite: ARCH 110 or instructor approval. Audit available.

BCT 244 Kitchen and Bath Cabinet Installation 2.00
Students will learn professional installation methods of kitchen and bath cabinetry. Room preparation, cabinet layout cabinet storage, cabinet and countertop installation, appliance installation, moldings will be covered. Customer relations and job site management techniques will be explored. Audit available.

BCT 280 Cooperative Education: Building Construction On-the-job training at a department-designated worksite, giving students experience in real work conditions and helping determine career choices. Department permission required.

BCT 280A Cooperative Education: Building Construction On-the-job training at a department-designated worksite, giving students experience in real work conditions and helping determine career choices. Department permission required.

BI 55 Human Biology 4.00
Surveys human body systems. Exercises include the identification of structural components of the body as well as investigations in physiology. Designed for students in the Medical Assisting and Ophthalmic Medical Technology programs. Prerequisites: Good command of the English language and Placement into RD 90. Audit available.

BI 101 Biology 4.00
Introduces the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. A laboratory science course designed for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 101H Biology: Honors 4.00
An honors laboratory science course designed for non-biology majors. Introduces the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. Course explores the application of biological principles to other disciplines. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores AND 3.25 GPA.

BI 102 Biology 4.00
Presents protein synthesis, cell division, genetics, reproduction and development, and evolution. Designed as a laboratory science course for non-biology majors. The second course of a three-course sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available.

BI 103 Biology 4.00
Presents the evolutionary relationships among the kingdoms. Includes a comparison of biological systems across kingdoms. Designed as a laboratory science course for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available.

BI 112 Cell Biology for Health Occupations 5.00
Includes the study of the scientific method, cellular chemistry, cell structure and function, principles of inheritance, and laboratory skills. Includes topics and skills required to continue to Anatomy & Physiology and
Microbiology. Prerequisites: WR 115, RD 115, and MTH 65 or equivalent placement test scores. Audit available.

BI 121 Introduction to Human Anatomy & Physiology I 4.00 Surveys anatomical terminology, basic chemistry, cell structure and function, tissues, and the following systems: integumentary, skeletal, muscular, and nervous. Lecture discussions complemented by laboratories involving physiological exercises, dissections, microscopy, and multimedia. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 122 Introduction to Human Anatomy & Physiology II 4.00 Surveys the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive, urinary, and some coverage of human development, human genetics, and immunology. Lecture discussions are complemented by laboratories which include physiological exercises, dissections, microscopy, and multimedia. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 121. Audit available.

BI 141 Habitats: Life of the Forest 4.00 Examines structure and function of Oregon forest ecosystems. Covers distribution and interactions of plants, animals, microorganisms, climate and basic geology. Laboratory emphasizes identification and environmental testing. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 142 Habitats: Marine Biology 4.00 Examines marine environment and the ecology, physiology, and morphology of marine plants and animals, emphasizing Oregon. Laboratory focuses on identification and environmental testing. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 143 Habitats: Fresh Water Biology 4.00 Covers environments of freshwater streams, lakes, and marshes. Includes effects of physical and chemical factors on organisms, along with the organisms, their biological interactions and nutrient cycles. Examines ecological factors of freshwater environments and the effects of human activities on them. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 145 Intro. to Fish and Wildlife Conservation and Management 4.00 Introductory lecture and laboratory on fundamental wildlife conservation and management. Course will cover the basic elements of wildlife population dynamics, biodiversity, the importance of habitat, legal and social aspects of wildlife management, human impacts on wildlife, and some management techniques. Wildlife examples from Oregon will be included. Prerequisites: Placement into MTH 60 and placement into WR 115. Recommended: BI 101 or equivalent. Audit available.

BI 160 Ecology/Field Biology: Coast 2.00 Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Oregon Coast. Audit available.

BI 161 Ecology/Field Biology: Malheur 2.00 Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Malheur geographical area. Audit available.

BI 163 Organic Gardening 4.00 Introduces the structure and function of soils including the soil food web, composting and compost tea, and the basics of biogeochemical cycling. Explores basic plant anatomy and the growing of flowers, vegetables and fruits in the Pacific Northwest. Includes discussion of organic pest control, beneficial insects, and pruning and grafting and exploration of these concepts in laboratory. An interest in plants and a basic high school biology course are recommended. Audit available.

BI 164 Bird ID and Ecology 4.00 An introductory course to the biology of birds of the Pacific Northwest. Emphasizes learning bird identification in the field by sight and sound. Aspects of avian ecology, natural history, and behavior will be studied. The student will be introduced to field techniques for identifying and studying birds. Recommended completion of WR 115 or placement into WR 121. Audit available.

BI 184 Independent Study - Biology Provides an opportunity for students to work independently on an individualized area of study within biology under the sponsorship and guidance of a biology faculty member. Prerequisite: Instructor permission. Audit available.

BI 200A Principles of Ecology: Field Biology 2.00 Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component surveying plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 200B Principles of Ecology: Field Biology 4.00 Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component surveying plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 200C Principles of Ecology: Field Biology 6.00 Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component surveying plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 202 Botany: An Introduction to the Plant Kingdom 4.00 A laboratory science course designed to have students develop knowledge about plant anatomy, physiology, how humans interact with plants, and particularly taxonomy with an evolutionary focus. Areas covered include mosses, ferns, conifers, and flowering plants. Recommended for students interested in agriculture, horticulture, ethnobotany, and general botany. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 211 Principles of Biology 5.00 Includes introduction to science, biochemistry, metabolism, the cell, molecular biology, and reproduction. The first course of a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Recommended: High school biology and chemistry within the past seven years. Prerequisites: WR 115 and RD 115 or equivalent placement test scores, and MTH 95 or higher. Prerequisite/Concurrent: CH 100 or higher; or instructor permission. Audit available.

BI 212 Principles of Biology 5.00 Includes inheritance, the genetic code, modern and classical genetics, evolution, diversity, and systematics. May include some dissection of plants and animals. The second course in a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Prerequisite: BI 211 and its prerequisite requirements. Audit available.

BI 213 Principles of Biology 5.00 Includes plant and animal anatomy and physiology, and individual, population, community and ecosystem ecology. The third course of a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Prerequisite: BI 212 and its prerequisite requirements. Audit available.

BI 222 Human Genetics 3.00 Lecture/discussion presentation of the fundamentals of human genetics. Includes physical basis of inheritance, the mechanics of inheritance, probability, sex chromosomal abnormalities, autosomal anomalies, gene structure and function, molecular genetics, behavioral genetics, twinning and contemporary issues in human genetics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 231 Human Anatomy & Physiology I 4.00 Introduces chemistry, cell, tissues, the integument, skeletal, muscular and nervous systems. It is the first course of a three-course sequence. Includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. Prerequisites: WR 115, RD 115 and MTH 65 or equivalent placement test scores, and BI 112 or (BI 211 and BI 212). Audit available.

BI 232 Human Anatomy & Physiology II 4.00 Introduces the nervous, endocrine, cardiovas-
BI 233 Human Anatomy & Physiology III 4.00 Introduces the respiratory, digestive, urinary and reproductive systems, metabolism and fluid and electrolyte balances; embryology and genetics. It is the third course of a three-course sequence. This class includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. Prerequisite: BI 231 with a "C" or better and its prerequisite requirements. Audit available.

BI 234 Microbiology 5.00 Lecture, recitation, and laboratory cover: bacterial identification, morphology, metabolism and genetics; bacterial, viral, and parasitic relationships with human health and disease; and basic immunology. Laboratory stresses aseptic technique, bacterial identification and physiology using a variety of media, culturing techniques, and staining techniques. Recommend BI 231. Prerequisites: BI 112 or (BI 211 and BI 212) and their prerequisite requirements. Audit available.

BI 241 Pathophysiology 3.00 Lecture/discussion presentation of alterations in homeostasis, alterations in cellular function; and diseases of the immune, muscular, skeletal, integumentary, nervous, cardiovascular, respiratory, digestive, endocrine, urinary, and reproductive systems. Prerequisites: BI 231 and 232. BI 233 is either a prerequisite or may be taken concurrently. Audit available.

BI 280A Cooperative Education: Biology Requires students to make a cooperative education training agreement with an instructor, an employer/supervisor, and a cooperative education specialist. The agreement will clearly define student, employer/supervisor, and instructor information as well as the job description (paid or unpaid) and length of job. The job should involve laboratory or field work associated with biology and/or environmental science and should extend student knowledge of Biology/Environmental Science. Prerequisite: BI 101 or BI 211, and instructor permission. Audit available.

BI 287 Introduction to Immunology 4.00 Introduces the principles of immunology including: development of the immune system, innate immunity, immunoglobulin structure and genetics, antigen-antibody reactions, the major histocompatibility complex reactions and antigen presentation, T cell receptors (genetics, structure, selection), T cell activation and effector functions, energy and apoptosis, cytokines, phagocytic cell function, immune responses to infectious organisms and tumors, autoimmune diseases, autoimmunity, allergies, and immune deficiencies. Recommended for students who seek admission into the allied health programs or clinical technology programs. Prerequisites: BI 112 or (BI 211 and BI 212) Audit available.

BI 298 Independent Study Provides an opportunity for students to work independently on an advanced individualized area of study within biology under the sponsorship and guidance of a biology faculty member. Recommend: Prior study in biology. Prerequisites: Instructor permission. Audit available.

BI 102 Current Topics in Bioscience Technology 2.00 Provides an overview of current topics in Bioscience Technology. Includes recombinant DNA technology, bioremediation, forensics, genetically modified organisms (GMO), stem cell technology, pharmaceutical drug discovery and medical devices as well as ethical and legal issues surrounding biotechnology today. Recommend: BI 112 or BI 211 or equivalent. Audit available.

BIT 105 Safety in the Bioscience Workplace 2.00 Survey of technical and regulatory aspects of physical, chemical, radiation and biological safety in the bioscience laboratory. Topics covered include: mechanical and electrical systems, hazards due to temperature and pressure, handling and storing hazardous chemicals, personal protective equipment, chemical waste disposals and spill, ionizing radiation and control measures, biological containment, disinfection/sterilization, medical waste handling, applicable regulations and guidelines. Prerequisites: Placement into WR 115 and RD 115. Audit available.

BIT 107 Bioscience Lab Math 2.00 Develops mathematics skill and problem-solving related to work in a bioscience laboratory or biomanufacturing environment. Includes calculations for solution preparation, analysis and manipulation of molecules and cells, analysis and interpretation of data and commonly used statistical methods. Prerequisite: MTH 65 or placement into MTH 95. Recommend: Prior or concurrent college-level course in Chemistry, or BI 112 or 211. Audit available.

BIT 109 Basic Laboratory Techniques and Instruments 5.00 Introduces fundamental principles and practices for the bioscience laboratory. Principles of quality documentation, safety, and precise communication will be emphasized throughout, in the context of technical activities that include solution preparation, instrumentation for measurements (weight, volume, temperature, pH, conductivity and spectroscopy), assay techniques and routine laboratory maintenance. Recommend prior or concurrent college level course in Chemistry, or BI 112 or 211, and MTH 65. Prerequisite: Placement into WR 115 and RD 115. Prerequisite or concurrent enrollment in: BIT 105 and BIT 107.

BIT 125 Quality Systems in Bioscience Technology 2.00 Introduction to internal and external quality systems that apply to the bioscience industry, with emphasis on working in a regulated enviroment. Also covers various agencies that regulate the bioscience industry, FDA regulation for good laboratory and manufacturing practices (GLP and cGMP), and processes relating to product approval. Audit available.

BIT 126 Applied Quality Practice 3.00 Introduces concepts and skills that are needed for entry level workers in the regulated bioscience and related work environments. Emphasizes validation, compliance, CAPA, audit, LEAN work habits, material and product control and coordinated quality teamwork through laboratory-based activities. Prerequisites: BIT 125 and BIT 109 or instructor permission.

BIT 181 Exploring Bioscience 3.00 Provides an overview and analysis of various Bioscience Technology work environments including research, development, and manufacturing. Covers career options, pathways, and development of skills that are needed for identification and procurement of entry level positions, education, and training opportunities in the bioscience field. Includes portfolio development and refinement of job search, resume writing and interview skills. Participation in field trips is essential. Prerequisite/concurrent: BIT 105, BIT 107, and BIT 109 or instructor permission. Recommended: completion or concurrent enrollment in BIT 125.

BIT 201 Immunochemical Methods 5.00 Introduces the general properties and uses of antibody molecules. Includes an overview immune response, biosynthesis of immunoglobulin, obtaining, purifying and labeling antibodies, and using antibodies in a variety of common applications (ELISA, Western blot, immunoprecipitation and immunocytochemistry, antibody-based affinity chromatography). Prerequisite: BIT 109 or 110; BI 112 or CH 100 or higher; or instructor permission.

BIT 203 Recombinant DNA 5.00 Labora-tory-intensive course focusing on the strategies and techniques used in recombinant DNA work. Covers vector and insert options and preparation, quantitation of DNA, ligation and transformation procedures, and analysis by restriction digest, blot hybridization and PCR. Prerequisites: BIT 109 or BIT 110; and any of the following: BIT 101, BIT 102, BI 112, BI 212 or BI 234, or instructor permission.

BIT 205 Bioseparations 5.00 Introduction of commonly used methods for separation of biological molecules for both analytical and preparative applications. This laboratory-intensive course will cover the principles of and practice in filtration, differential precipitation, and electrophoretic and chromatographic techniques. Prerequisite: BIT 109 or BIT 110; and any of the following: BIT 155, BI 112, CH 100 or higher; or instructor permission.

BIT 207 Cell Culture 5.00 Laboratory-intensive course providing introduction to and practice in the culture of animal cells and cell lines. Focus is on routine maintenance and record-keeping, including media preparation, cryopreservation, and troubleshooting.
COURSE DESCRIPTIONS

BIT 215 Protein Purification 5.00 Application of commonly used methods for separation of biological molecules in multi-step protein purifications. This laboratory intensive course will focus on issues of recovery and yield, step-to-step analysis and troubleshooting, as well as documentation and reporting procedures and results. Prerequisite: BIT 205 or instructor permission.

BIT 223 Advanced DNA Techniques 5.00 Laboratory-intensive course focusing on the theory and practice of techniques for analysis and manipulation of nucleic acids. Topics include construction and use of plasmid and phage libraries, DNA sequence determination and analysis, bioinformatics, and applications of PCR. Prerequisites: BIT 203 or instructor permission.

BIT 280A Work Experience Students work in a biotechnology laboratory, supervised by professionals on site and by program instructor(s). Department permission required.

BIT 280B Work Experience - Seminar 1.00 PREREQ: Department permission required.

BIOL & MANAGEMENT OF ZOO ANIMALS

BMZA 100 Introduction to Zoo Science 2.00 Examines the history and mission of zoos, their roles in conservation, zoo structure and governance, and career opportunities. Introduces the taxonomy and general characteristics of animals with a focus on taxa commonly encountered in zoos. Prerequisite: WR 121. Department permission required. Audit available.

BMZA 101 Introduction to the Biology and Management of Zoo Animals 4.00 Examines the fundamental concepts of animal management including health and safety, feeding and handling, enclosure management, behavior and population management, plus maintenance of records and permits. Prerequisites: WR 121 and MTH 65. Department permission required. Audit available.

BMZA 105 Comparative Vertebrate Anatomy and Physiology I 4.00 Presents a comparative approach to structure, function, and evolution of the vertebrate classes. Examines histology and organ systems with emphasis on integumentary, skeletal, muscular, and nervous systems. Includes laboratory dissections of representative vertebrate specimens. Prerequisites: BI 112 and (CH 100 or CH 104). Department permission required. Audit available.

BMZA 106 Comparative Vertebrate Anatomy 4.00 Presents a comparative approach to structure, function, and evolution of vertebrate organ systems with emphasis on special senses, circulatory, respiratory, digestive, urinary, reproductive, and endocrine systems. Includes laboratory dissections of representative vertebrate specimens. Prerequisites: BI 112 and (CH 100 or CH 104). Department permission required. Audit available.

BMZA 107 Basic Horticulture for Zoo Keepers 4.00 Introduces the principles and importance of horticulture in the design, culture and maintenance of zoological enclosures. Covers basic plant anatomy and physiology, plant ecology in a controlled environment, plant identification and use of plant material to supplement diets of captive populations. Includes hands-on horticultural techniques for maintenance. Prerequisite: BMZA 110. Department permission required. Audit available.

BMZA 110 Animal Nutrition 4.00 Introduces various types of nutrients, the basic principles of nutrition as applied to exotic animals, principles of diet formulation, and important nutritionally caused diseases. Explores nutritional needs of orphaned animals, geriatric animals and nutrient requirements across taxa. Prerequisites: MTH 65 and (CH 100 or 104). Department permission required. Audit available.

BMZA 150 Captive Population Management 4.00 Introduces basic principles of captive population management including reproductive and genetic management, animal relocations, and collection and regional planning with the use of studbooks and various cooperative groups. Prerequisites: BMZA 101. Department permission required. Audit available.

BMZA 201 Zoo Biology & Management II - Amphibians and Reptiles 4.00 Examines the diversity of taxa within amphibians and reptiles and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 202 Zoo Biology & Management II - Birds 4.00 Examines the diversity of avian taxa and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 203 Zoo Biology & Management IV - Mammals 4.00 Examines the diversity of mammalian taxa and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 210 Zoo Biology & Management II - Amphibians and Reptiles 4.00 Examines the diversity of taxa within amphibians and reptiles and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 220 Veterinary Procedures and Treatments for Zoo Keepers 4.00 Examines the critical importance of observation plus veterinary treatment techniques for zoo animals. Includes preventative health care and identification of health problems, restraint, immobilization, and transport, administration of prescribed medication, and care of geriatric and neonate animals. Prerequisites: BI 112, BMZA 105 and BMZA 106. Department permission required. Audit available.

BMZA 231 Introduction to Animal Behavior 4.00 Introduces the concepts of animal behavior with particular emphasis on species exhibited within zoos. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 232 Zoo Animal Behavior Management 2.00 Promotes the use of environmental enrichment, operant conditioning and training, and other behavioral management techniques to enhance the physical and psychological well-being of captive animals and to effectively carry out the missions of the facility. Prerequisite: BMZA 231. Department permission required. Audit available.

BMZA 240 Zoo Water Quality Management 2.00 Introduces the fundamental principles and application of water management techniques to water systems typically used in zoos. Prerequisites: MTH 65 and (CH 100 or 104). Department permission required. Audit available.

BMZA 250 Conservation Biology 4.00 Explores the challenges of declining biodiversity and examines the role of zoos in contributing to population and habitat conservation. Provides field experience with species conservation programs. Prerequisites: BMZA 101, 201, 202, 203. Department permission required. Audit available.

BMZA 255 Wildlife Education Management 4.00 Introduces public relations issues and environmental and wildlife interpretative techniques. Provides an opportunity for skill development in the areas of wildlife interpretation and development of educational materials and programming for specific target audiences. Prerequisite: SP 111. Department permission required.

BMZA 260 Exhibit Design 2.00 Examines the design process of zoo exhibits to ensure that the physical and psychological well-being of captive animals is considered as well as safety and aesthetic issues. Corequisite: BMZA 265. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 265 Exhibit Construction, Maintenance, and Repair 2.00 Provides an overview of the basic concepts used in animal exhibit construction, maintenance and repair. Emphasizes safety, identification, selection, usage and care of hand and power tools to complete projects in a team environment. Introduces the use of construction materials, concrete and related hardscapes, reading blueprints, and communication regarding mechanical, electrical, and plumbing services. Corequisite: BMZA 260. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 270 Biology and Management of Zoo Animals Seminar 1.00 Explores a variety of current concepts and issues in zoo biology and management. Prerequisite: BMZA 100 and SP 111. Department permission required. Audit available.

BMZA 280A Cooperative Education in Zoos Provides an opportunity to apply classroom learning through work experience in animal care and management at the Oregon Zoo, supervised by profes-
BMZA 280B Cooperative Education: Zoological Specialty 4.00 Provides an opportunity to apply classroom learning to hands-on specialty work experience matching specific learning objectives at the Oregon National Primate Research Center, Oregon Zoo, or other approved site, supervised by professionals on site and by program instructor(s). Prerequisite: BMZA 280A. Department permission required.

BMZA 280B Cooperative Education: Zoological Specialty 4.00 Provides an opportunity to apply classroom learning to hands-on specialty work experience matching specific learning objectives at the Oregon National Primate Research Center, Oregon Zoo, or other approved site, supervised by professionals on site and by program instructor(s). Prerequisite: BMZA 280A. Department permission required.

CAS 121 Beginning Keyboarding 3.00 Introduces the alphabetic portion of computer keyboard by touch. Develops and improves basic keyboarding techniques to increase speed and accuracy. Involves production of basic business and academic documents using a word processor. Recommended: Placement into RD 90 and WR 90 or above. Audit available.

CAS 121A Beginning Keyboarding 1.00 Introduces the alphabetic portion of computer keyboard by touch. Develops and improves basic keyboarding techniques. Recommended: Placement into RD 90 and WR 90 or above. Audit available.

CAS 122 Keyboarding for Speed and Accuracy 3.00 Develops confidence, endurance, and control for accurate keyboarding while increasing keyboarding speed. Develops ability to proofread documents accurately and efficiently. Keying by touch is essential. Recommended: Placement into RD 90 and WR 90 or above. Audit available.

CAS 123 Production Keyboarding 3.00 Develops rapid keyboarding and accurate proofreading of business letters, memos, reports, and tables. Improves and increases speed and accuracy of keyboarding skills. Recommended: Placement into RD 115 and WR 115 or higher, OS 220, and keying 45 wpm by touch. Prerequisite: CAS 216 or instructor permission. Audit available.


CAS 135 Keeping Your Computer Healthy 3.00 Practical computer course demonstrating ways of using a Windows computer effectively, and maintaining it to operate smoothly, efficiently and securely. Explores issues such as protection from viruses, spyware and adware; data backup and recovery; organizing your files; connecting to the Internet; setting up a home network; customizing your Windows interface; installing/uninstalling software; speeding up Windows; maintaining and optimizing your PC to run at its best. Ideal for personal use or small business owners. Recommended: RD 115 or WR 115 and CAS 133. Audit available.

CAS 137 Database on MS Works 3.00 Introduces the basic features of Adobe Creative Suite, producing a simple, multi-page website using Dreamweaver, Photoshop, Flash, Fireworks, Bridge, and Acrobat. Develops familiarity with the web design process. Includes basic web terminology, uploading pages to a server (FTP), and optimizing graphics. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

CAS 140 Beginning Access 3.00 Introduces the basics features of Microsoft Access. Covers beginning database management concepts including tables, forms, reports, queries, and basic macros. Stresses a working knowledge of database management vocabulary. Emphasizes efficient use of Access toolbars and menus. Discusses database design issues. Recommended: Placement into RD 115 and WR 115. Audit available.

CAS 150 Introduction to Speech Recognition 1.00 Use Speech Recognition software to input information into the computer. Students will train the software to his/her voice and learn voice commands to edit, format, and produce documents. Computer literacy required. Recommended: CAS 133 and placement into RD 80. Audit available.

CAS 151 Microsoft Outlook 1.00 Introduces the basic features of Microsoft Outlook to send and receive e-mail, organize schedules and events, and maintain Contacts lists, to-do lists, and tasks. Emphasizes the Outlook skills necessary in business environments. Recommended: Placement into RD 115 and WR 115. Audit available.

CAS 170 Beginning Excel 3.00 Introduces the basic features of Microsoft Excel and spreadsheet concepts to design and create accurate professional worksheets for use in business and industry, and academic environments. Includes entering data; creating formulas; professional formatting; creating charts; creating, sorting, and filtering lists; creating and using templates; and working with functions. Focuses on ways
to ensure accuracy including proofreading techniques and critical thinking to determine what data to present and how to present it. Recommended: Placement into RD 115, WR 115 and MTH 20. Audit available.

**CAS 170A Beginning Excel 1.00** Introduces the basic features of Microsoft Excel. Includes moving around the spreadsheet, entering data, formatting, and printing. Stresses a working knowledge of spreadsheet vocabulary. Recommended: Placement into RD 115 and WR 115. Audit available.

**CAS 171 Intermediate Excel 3.00** Introduces advanced features of Excel to design and create accurate, professional worksheets for use in business and industry. Includes financial, logical, statistical, lookup, and database functions; pivot tables; “what-if” analysis with data tables; importing data; complex graphs; macros; and solver features. Focuses on ways to ensure accuracy including proofreading techniques and critical thinking to determine what data to present and how to present it. Prerequisite: CAS 170 or instructor permission. Audit available.

**CAS 175 Introduction to Flash 3.00** Introduces the basic features of Adobe Flash to create and edit animated movies and web graphics. Covers shape and motion tweening, masks, symbols, and basic ActionScripting. Emphasizes using the Flash interface efficiently. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

**CAS 180 Search Engine Optimization-SEO 3.00** Introduces techniques and skills necessary to elevate your website to the number one position in a search through the use of up-to-date concepts for optimizing the searchability of web pages on the Internet. Introduces the creation of a tailored Search Engine Optimization (SEO) strategy, including on-page and off-page search engine optimization, META data research and analysis, traffic generation, online tools and SEO software. Covers client side SEO. Prerequisite: CAS 111D or CAS 111E or CAS 206 or instructor permission. Audit available.

**CAS 181 Web Site Creation using CMS - Content Management Systems 3.00** Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using a Content Management System (CMS), such as Joomla or Drupal. Includes installing and modifying templates, creating efficient site navigation using menus, organizing a site using components and modules, enhancing a site with plugins and extensions, and creating user functionality with user logins. Recommended: CAS 111D, CAS 206, and CAS 215; placement into RD 115 and WR 115. Audit available.

**CAS 181D CMS Website Creation: Drupal 3.00** Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using Drupal, a Content Management System (CMS). Includes setting up a Drupal website in a remote server environment, working with modules, creating efficient site navigation using menus, and organizing a site using modules, blocks, nodes, content types and fields. Also includes enhancing a site with additional content types, modules and themes, and creating user functionality with user logins. Prerequisite: CAS 215 or instructor permission. Recommended: CAS 111D and CAS 206; placement into RD 115 and WR 115. Audit available.

**CAS 181J CMS Website Creation: Joomla 3.00** Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using Joomla, a Content Management System (CMS). Includes setting up a Joomla website in a remote server environment, working with templates, creating efficient site navigation using menus, organizing a site using components and modules, enhancing a site with plugins and extensions, and creating user functionality with user logins. Recommended: CAS 111D, CAS 206, and CAS 215; placement into RD 115 and WR 115. Audit available.

**CAS 181W CMS Website Creation: WordPress 3.00** Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using WordPress, a Content Management System (CMS). Includes installing and modifying templates, creating efficient site navigation using menus, organizing a site using components, enhancing a site with plugins, creating a blog, and creating user functionality with user logins. Recommended: CAS 111D, CAS 206, and CAS 215; placement into RD 115 and WR 115. Audit available.

**CAS 206 Principles of X/HTML 4.00** Introduces X/HTML using an HTML editor. Includes web terminology, basic X/HTML, uploading pages to a server (FTP), site management, links, lists, tables, forms, working with web graphics, accessibility, and introduction to stylesheets (CSS). Includes creating a multi-page website using these technologies. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

**CAS 208 Beginning Photoshop for the Web 3.00** Introduces image editing features of Adobe Photoshop to create and refine graphics for websites. Introduces image editing techniques and export options for the web. Emphasizes using the Photoshop interface efficiently to produce web images and assets. Recommended: MM 120. Prerequisite: CAS 111D or CAS 111E or CAS 206 or instructor permission. Audit available.

**CAS 211D Intermediate Dreamweaver 3.00** Plan and publish professional web sites using the intermediate/advanced features of Dreamweaver. Includes behaviors, templates, inserting audio and video, Spry tools, advanced form features and Extensions. Recommended: CAS 111D or equivalent. Audit available.

**CAS 213 JavaScript and jQuery for Designers 4.00** Develops skills to find, utilize and modify JavaScript and jQuery resources on the Internet. Explores ways to make a web site come alive with a variety of interactive effects such as displaying and hiding text or images, filling out form fields automatically, creating interactive maps or calendars, and creating beautiful DHTML windows. Prerequisite: CAS 215 or instructor permission. Audit available.

**CAS 214 Beginning ColdFusion/CFML 4.00** Introduces dynamic websites that run on ColdFusion or one of its Open Source competitors. Explores CFML, a simplified tag-based coding language which dramatically reduces development time. Covers server-side techniques such as responding to data submitted from forms, passing information between web pages, retrieving information from a database, managing sessions, and displaying text/images on the screen in response to user requests. Includes creation of dynamic E-Commerce or business websites using CFML. Recommended: CAS 206, CAS 213, CAS 215, and CIS 122 or equivalent; placement into RD 115 and WR 115. Audit available.

**CAS 215 Intermediate Dreamweaver 3.00** Intermediate/advanced features of Dreamweaver. Includes setting up a Joomla website in a remote server environment, working with modules, creating efficient site navigation using menus, organizing a site using components and modules, enhancing a site with plugins and extensions, and creating user functionality with user logins. Prerequisite: CAS 215 or instructor permission. Audit available.

**CAS 216 Beginning ColdFusion 3.00** Introduces dynamic websites that run on ColdFusion or one of its Open Source competitors. Explores CFML, a simplified tag-based coding language which dramatically reduces development time. Covers server-side techniques such as responding to data submitted from forms, passing information between web pages, retrieving information from a database, managing sessions, and displaying text/images on the screen in response to user requests. Includes creation of dynamic E-Commerce or business websites using CFML. Recommended: CAS 206, CAS 213, and CIS 122 or equivalent; placement into RD 115 and WR 115. Audit available.

**CAS 216A Beginning Word 1.00** Introduces the basics of Microsoft Word to create, edit, and print basic documents such as letters and memos. Recommended: Placement into RD 115 and WR 115; keyboarding 25 words per minute. Audit available.

**CAS 217 Intermediate Word 3.00** Review basic features and develop additional skill using Word. Enhance documents through special formatting features such as graphic lines and images, Word Art, and clipart; work with headers and footers in multi-page documents; create and format tables; use advanced merge; create documents with newspaper columns; and create and use fill-in forms. Recommended: Placement into RD 115 or WR 115; CAS 216; or instructor permission. Additional lab hours may be required, consult instructor. Audit available.

**CAS 220 Project Management - Beginning MS Project 3.00** Introduces MS Project, including building entry tables, generating reports, resolving resource and time conflicts, importing data, and tracking budgets. Includes the design and creation of accurate Gantt charts for use in project management.
Recommends: Placement into RD 115 and WR 115; experience with project management or MSD 279; working knowledge of Windows and file management. This course is part of the Project Management series of classes that includes MSD 279, BA 255, and CIS 245. Audit available.

CAS 225 PHP and MySQL for Designers 4.00 Develops skills for finding, utilizing and modifying PHP and MySQL resources on the Internet. Explores ways to personalize web sites for visitors with a variety of dynamic server-based techniques such as processing forms, displaying text or images from a database, implementing a shopping cart or a discussion board, tracking visitors, and password-protecting a web site. Includes how to install PHP and MySQL. Prerequisite: CAS 213 or instructor permission. Audit available.

CAS 231 Publisher 3.00 Introduces Microsoft Publisher to design and create effective publications that combine text graphics, illustrations, and/or photographs such as announcements, fliers, advertisements, and reports. Covers the processes to create, import, and manipulate text, graphics, and/or templates through program tools and features. Recommended: Placement into RD 115 and WR 115; prior knowledge and use of Windows technology. Audit available.

CAS 232 Desktop Publishing: InDesign 3.00 Introduces Adobe InDesign, a desktop publishing software, to design and create effective publications such as announcements, fliers, advertisements, and reports. Covers the processes to create, import, and manipulate text and/or graphics through use of software features. Recommended: Placement into RD 115 and WR 115 and prior knowledge and use of Windows technology and CAS 216. Audit available.

CAS 246 Integrated Computer Projects 4.00 Involves creation of individual and group projects using integrated software, e.g., Microsoft utilizing previous computer and business knowledge. Utilizes previous computer and business knowledge to create individual and group projects using integrated software, i.e., MS Office. Explores integrated software features to develop skills such as linking and embedding, email, Internet, and scanning. Recommended: CAS 170 and CAS 216. Audit available.

CAS 275 Intermediate Flash 3.00 Continues to explore Flash concepts to create a Flash-based website and work on complex animations and effects. Includes working with frame labels, nested movie clip symbols, some ActionScript to support website creation and the incorporation of video and audio. Recommended: CAS 111D or CAS 111E or CAS 206 or equivalent. Prerequisite: CAS 175 or instructor permission. Audit available.

CAS 280W Cooperative Education: Web Site Development Provides field experience for students related to web site development. Recommended: Satisfactory progress through two terms of web site classes or equivalent experience. Audit available.

CAS 285 Capstone for Website Development/Design 3.00 Encompasses producing a dynamic web project using industry standard software and technical tools. Includes planning, production, project review, and peer critiques. Includes completion of an online portfolio showcasing coursework artifacts from all completed courses. Includes development of a self-marketing statement emphasizing student web focus area. Prerequisite: Department Approval Required.

COLLEGE GUIDANCE & COLLEGE SUCCESS

CG 100A Career Survival and Success 3.00 Provides information and techniques on time and money management, motivation, and goal-setting for college success. Develop skills in communicating in a culturally diverse learning environment and accessing online and in-person college resources and services. Audit available.

CG 100B Career Survival and Success 2.00 Provides information and techniques on time management, motivation, and goal-setting for college success. Develop skills communicating with instructors and students and accessing online and in-person college resources and services. Audit available.

CG 100C Career Survival and Success 1.00 Provides basic information on time management and goal setting for college success. Develop skills in communicating with instructors and accessing online and in-person college resources and services. Audit available.

CG 105 Scholarships: S$ for College 2.00 Provides a systematic approach to researching and applying for scholarships. Topics include: Creating a scholarship portfolio, Oregon Student Assistance Commission application, PCC Foundation application, internet resources, and research strategies. Students will identify skills, accomplishments, values, goals, and life experiences, and learn strategies to translate them into an effective scholarship application. Interviewing tips will be discussed. Panels and guest speakers, including scholarship winners, will share perspectives on the scholarship process. Corequisite: WR 105: Scholarship Essay Writing Audit available.

CG 110A Study Skills for College Learning 3.00 Provides information, techniques, and strategies helpful in becoming more efficient in studying notetaking, textbook reading, and taking exams. Identify preferred learning style and develop skills in scheduling study time, library research, memory strategies, and critical thinking. Prerequisites: Placement into WR 115 and RD 115 Audit available.

CG 111A Study Skills for College Learning 2.00 Provides information, techniques, and strategies helpful in becoming more efficient in notetaking, textbook reading, and taking exams. Identify preferred learning style and develop skills in scheduling study time and memory strategies. Prerequisites: Placement into WR 115 and RD 115 Audit available.

CG 111C Study Skills for College Learning 1.00 Introduces information and techniques in notetaking, textbook reading, and taking exams. Develop a study schedule. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 112 Managing Test Anxiety 1.00 Provides strategies to overcome barriers to effective test taking to improve overall test performance. Test preparation and test anxiety are examined. Audit available.

CG 114 Financial Survival for College Students 1.00 Provides basic information and strategies to empower individuals to make positive decisions about funding their education and establishing control over their financial lives, leading to financial independence and reduced life stress. Topics include student financial aid and funding college, budgeting, wise use of credit, controlling debt, basic financial planning, effective financial decision making, and avoiding financial mistakes and pitfalls. CG 114 and BA 114 are equivalent. Only one may be taken for credit. Prerequisite: WR 90, RD 90, and MTH 20 or equivalent placement test scores. Audit available.

CG 130 Today’s Careers 2.00 Explores careers and what it takes to succeed in them. Covers ways of gathering information about specific occupations. Uses guest speakers from a variety of career areas and helps develop a plan for next steps. Provides basic career information. Audit available.

CG 130H Introduction to Today’s Careers: Health 2.00 Explores career opportunities in the health professions. The focus will be on the educational and licensing requirements, professional and ethical responsibilities, physical requirements, workplace environment and career pathways of each profession. Audit available.

CG 140A Career and Life Planning 3.00 This course provides students with the most in depth tools needed to make informed career decisions. Students will assess career confidence and readiness, skills, values, interests, personality, obstacles, attitudes and approaches to decision making. This course provides instruction on how to research career information, gain access to information materials, and methods of exploring careers. Also included is educational decision making which covers choice of major and college as well as planning a program of study. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 140B Career and Life Planning 2.00 This course provides students with the tools needed to make informed career decisions. Students will assess skills, values, interests, personality, obstacles, and approaches to decision making. The course provides instruction on how to research career information, gain access to information materials, and methods of explor-
CG 140C Career and Life Planning 1.00
This course provides students with the tools needed to make informed career decisions. Students will assess skills, values, interests, and personality toward making a career decision. The course provides instruction on how to research career information, gain access to information materials, and methods of exploring careers. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 144 Introduction to Assertiveness 1.00
Applies assertive communication skills to relationships both in personal and professional environments. Includes an overview of assertive communication and behavior and skill development in the areas of communication and personal conflict resolution. Audit available.

CG 145 Stress Management 1.00
Identifies specific, personal stressors and develops skills that enable students to more effectively deal with stress. Audit available.

CG 146 Value Clarification 1.00
Examines beliefs, attitudes and values behind decisions and actions including whether behavior matches stated beliefs, evaluating consequences of choices and developing a process that will enable the development of personalized values. Audit available.

CG 147 Decision Making 1.00
Introduces the concept of decision making in both personal and professional environments. Includes an overview of goal setting and decision making models. Audit available.

CG 180 Intercultural Leadership for Mentees 1.00
Provides an opportunity for students from diverse cultural backgrounds to celebrate their cultural identity, develop educational goals and enhance their leadership skills. Includes college retention strategies, multi-cultural communication, diversity, team-building, community and environmental responsibility, critical thinking, problem solving, cultural awareness and self-reflection. Connects students with a mentor(s) through a series of interactive sessions. Course may be taken three times for credit. Prerequisite: Instructor permission.

CG 190 Intercultural Leadership for Mentors 3.00
Explores concepts of cross-cultural leadership and mentorship styles. Assists in the development of leadership and mentorship skills with the intent of supporting college success and retention of self and others. Includes teambuilding, goal-setting, role modeling, public speaking, time management, ethics, diversity, and customer service. Inspires the cultivation of a personal leadership vision and cross-cultural awareness, respect, and understanding. Course may be taken three times for credit. Requirement: Must pass a criminal background check if working with middle or high school students. Audit available.

CG 191 Exploring Identity and Diversity
for College Success 4.00
This course is designed to assist students in gaining a deep understanding of the impact diversity and social justice has on human development and their experiences as students in college. The experiential nature of this course will provide students an opportunity to explore the different facets of identity development and how culture plays a role in their college experience. Participants will also develop culturally competent skills to succeed in college and in a diverse society. Prerequisite: Placement into WR 121. Audit available.

CG 209 Job Finding Skills 1.00
Explores broad range of job search techniques, including building a job network, compiling appropriate information for job applications, targeting cover letters and resumes, typical interview questions and techniques. Promotes overall understanding of the job search process. Audit available.

CG 225 Transfer to a Four Year College 2.00
Provides students planning to transfer to a four-year college with an understanding of the various processes, requirements, and issues that impact successful transitions. Provides strategies and information critical to both academic development and adjustment to the four-year college system. Prerequisite: Placement into WR 115 and RD 115. Audit available.

CG 280A CE: Career Development Students earn credit for learning from practical experience at a worksite related to their major or career goal. Appropriate work experiences provide opportunities for new learning and skill development. May be repeated up to 12 credits.

CG 280B CE: Career Development - Seminar 1.00
The Co-op seminar supplements the Co-op work experience by offering a flexible menu of assignments from which to select a variety of activities. Includes video tapes, selected readings, workshops, lectures and a variety of career related exercises to enhance career development. Department permission required. Co-requisite: CG 280A. Course may be repeated.

CG 280L Career Development 1.00
Provides Latino high school students an opportunity to develop leadership skills, explore career and educational options after high school through interactive sessions. Audit available.

CG 0690 Stopping Test Anxiety 1.00
Covers techniques for coping with excessive test-taking anxiety and improving overall test performance. Audit available.

CG 0693 Confidence Building 1.00
Helps students explore the concept of self-confidence: how it is learned, how it can be developed and how it is sabotaged. Ideas, tools and techniques are introduced that will help students in their development of a stronger self-image. Audit available.

CG 0695 Confidence Building 1.00
Helps students explore the concept of self-confidence: how it is learned, how it can be developed and how it is sabotaged. Ideas, tools and techniques are introduced that will help students in their development of a stronger self-image. Audit available.
CH 211 Introduction to Biochemistry 4.00 Introduces the chemistry of biological systems. Principal topics covered are: the structure and function of biological molecules, the chemistry of heredity, metabolism and biological energy. CH 106 or 200-level organic chemistry required. Audit available.

CH 221 General Chemistry I 5.00 Introduces measurements, classification and properties of matter, nomenclature, atomic structure and modern atomic theory, periodic table and chemical periodicity, and chemical bonding. This is the first course in a three course sequence. Recommended for chemistry and other natural science majors, and pre-professional majors in engineering, medicine and dentistry. Recommended: Successful completion of high school or a college chemistry class with a lab component in the last 3 years. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Prerequisite/concurrent: MTH 111. Audit available.

CH 221H General Chemistry I: Honors 5.00 An honors version of General Chemistry I. Introduces measurements, classification and properties of matter, nomenclature, atomic structure and modern atomic theory, periodic table and chemical periodicity, and chemical bonding. This is the first course in a three course sequence. Recommended for chemistry and other natural science majors, and pre-professional majors in engineering, medicine and dentistry. Recommended: Successful completion of high school or a college chemistry class with a lab component in the last 3 years. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Prerequisite/concurrent: MTH 111 AND 3.25 GPA.

CH 222 General Chemistry II 5.00 Introduces stoichiometry; chemical reactions and equations; thermo chemistry; physical states of matter including properties of gases, liquids, solids and solutions; an introduction to organic chemistry; and chemical kinetics. This is the second course in a three course sequence. Prerequisite: CH 221. Audit available.

CH 222H General Chemistry II: Honors 5.00 An honors version of General Chemistry II. Introduces stoichiometry; chemical reactions and equations; thermo chemistry; physical states of matter including properties of gases, liquids, solids and solutions; an introduction to organic chemistry; and chemical kinetics. This is the second course in a three course sequence. Prerequisite: A ‘B’ letter grade in CH221 or CH221H AND 3.25 GPA.

CH 223 General Chemistry III 5.00 Introduces acid-base chemistry, ionic equilibria; electrochemistry; nuclear chemistry; thermodynamics; and descriptive chemistry topics. Special topics will be included as time and interest allows. This is the third course in a three course sequence. Prerequisite: CH 222. Audit available.

CH 223H General Chemistry III: Honors 5.00 An honors version of General Chemistry III. Introduces acid-base chemistry, ionic equilibrium, nuclear chemistry; thermodynamics; and descriptive chemistry topics. Special topics will be included as time and interest allows. This is the third course in a three course sequence. Prerequisite: CH 222. Audit available.

CH 242 Organic Chemistry II 5.00 Introduces radical reactions; substitution and elimination reaction mechanisms; structure and chemistry of alcohols, ethers, epoxides and their sulfur analogues; introduction to organometallic compounds; amines, aromaticity; structure and chemistry of aromatic compounds; NMR, UV-VIS and Mass Spectroscopy; special topics are included as time and interest permits. This is the second course in a three course sequence. Students receive Oregon University Systems upper division credit for Organic Chemistry 241, 242, and 243, upon successful completion of the ACS Organic Exam in CH 243. Prerequisite: (CH221, 222, 223) or (CH104, 105, 106). Audit available.

CH 242H Organic Chemistry II: Honors 5.00 Same as CH 242 in addition to focusing on advanced topics in the areas of organic chemistry. Audit available.

CH 243 Organic Chemistry III 5.00 Introduces carboxylic acids, carboxylic acid derivatives, amines, carbohydrates, amino acids, proteins, lipids, nucleic acids, heterocyclic compounds, spectroscopy and selected topics. This is the third course in a three course sequence. Students receive Oregon University Systems upper division credit for Organic Chemistry 241, 242, and 243, upon successful completion of the ACS Organic Exam in CH 243. Prerequisite: CH 242. Audit available.

CHN 101 First Year Chinese 5.00 The first course of a three-course sequence in introductory Mandarin Chinese language and culture class, with a well-balanced emphasis on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Expands beginning learners’ language proficiency as well as cultural awareness and understanding. Recommended: CHN 101 or instructor permission. Audit available.

CHN 102 First Year Chinese 5.00 The second course of a three-course sequence in introductory Mandarin Chinese language and culture class, with the expansion on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Expands beginning learners’ language proficiency as well as cultural awareness and understanding. Recommended: CHN 102 or instructor permission. Audit available.

CHN 103 First Year Chinese 5.00 The third course of three-course sequence in introductory Mandarin Chinese language and culture class, with the expansion on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Expands beginning learners’ language proficiency as well as cultural awareness and understanding. Recommended: CHN 103 or instructor permission. Audit available.

CHN 201 Second Year Chinese 5.00 Reviews and expands learners’ language proficiency as well as cultural awareness and understanding from first-year college Mandarin Chinese. Emphasizes effective skills in both the written and spoken language. The first course of a three-course sequence of second-year Mandarin Chinese. Prerequisite: CHN 103 or instructor permission. Audit available.

CHN 202 Second Year Chinese 5.00 Expands learners’ language proficiency as well as cultural awareness and understanding. The second course of a three-course sequence of second-year Mandarin Chinese language and culture, with a great emphasis given to improving effective communicative skills in both the written and spoken language and an understanding of the practices and products of Chinese culture. Prerequisite: CHN 201 or instructor permission. Audit available.

CHN 203 Second Year Chinese 5.00 Introduces the cultural heritage of Chicano/Latino people in the United States. Drawing on disciplines such as anthropology, folklore, literature, film, linguistics, folk and popular culture, integration of various traditions in Chicano/Latino communities, are examined. Audit available.

CHLA 203 Introduction to Chicano/Latino Studies III 4.00 Introduces the cultural heritage of Chicano/Latino people in the United States. Drawing on disciplines such as anthropology, folklore, literature, film, linguistics, folk and popular culture, integration of various traditions in Chicano/Latino communities, are examined. Audit available.
CHN 260 Chinese Culture 3.00 Chinese culture through films and music. Increase understanding of Chinese traditional and modern culture and society through analysis of cultural, historical and social issues by mass media and products. Explore concepts such as families, social roles, friendship, social values, morality, philosophies, economics, and more. Course conducted in English. Chinese materials presented in class will be subtitled in English. Prerequisite: CHN 202 or instructor permission.

CIS 100A Technology-High Tech - Career Exploration I 2.00 Introduces high tech careers including education, ethics, and work environment. Assesses individual skills, abilities and attitudes. Presents high technology disciplines through class discussions, presentation by professionals, mentoring, and hands-on activities. Create a written plan to help prepare for a career in high technology. Note: Not an elective toward a CIS degree or certificate. Audit available.

CIS 100B Technology - High Tech Career Exploration II 2.00 Continues high tech career exploration including education, ethics, and work environment. Assesses individual skills, abilities and attitudes. Presents high technology disciplines through class discussions, presentation by professionals, mentoring, and hands-on activities. Completes a plan to help prepare for a career in high technology. English communication skills necessary. Note: This elective course will not count toward a CIS degree or certificate. A student cannot receive credit for both CIS 100 (A and B) and CIS 100. Audit available.

CIS 120 Computer Concepts I 4.00 Introduces computing fundamentals from the past into the future, utilizes key applications to solve practical problems, and explores the benefits and risks of living online. Designed for the student who is already computer literate with MS Office applications, e-mail, and the Internet and focuses on applying this literacy to practical IT applications. Provides a foundation to pursue an IT pathway and helps prepare students for the IC3 certification. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Recommended: basic computer skills equivalent to CAS 133 or BA 131. Audit available.

CIS 121 Computer Concepts II 4.00 Evaluate, select and apply computer technology to solve practical problems. Use Internet technologies, organize and display information using a database. Address ethical issues. Recommended: CIS 120 or equivalent. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

CIS 122 Software Design 4.00 Illustrates the importance of software design as part of the software development life cycle. Prepares students to take programming courses, by giving examples of well-designed software projects. Students are expected to design small programming projects, and code the projects to prove the design. Basic logic constructs, modularity and an introduction to object design are included. Additional lab hours may be required. Recommended: CIS 120 or CAS 133 or BA 131. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

CIS 125D Database Application Development I 4.00 Concepts of a client-based relational database management system (RDBMS) and application of such systems to the business environment. Topics include database management issues, database design, creating and maintaining databases, creating forms, queries and reports. Design, create and maintain a database system. Recommended: CIS 121 or instructor permission. Audit available.

CIS 133B Java Programming I 4.00 Introduces object-oriented and programming concepts from a software engineering and project oriented perspective. Includes collection processing, UML class diagrams, unit testing, Java API, program documentation, debugging, and use of an Integrated Development Environment. Recommended: Placement into WR 121 and CIS 122 or instructor permission. Audit available.

CIS 135D Database Application Development II (VBA) 4.00 Design, development and implementation of a complete database application using Visual Basic for Applications (VBA). Covers Access Object Model, user interfaces, object variables, ADO automation, databases on a server, and COM add-ins. Thorough documentation and structured programming techniques will be emphasized. Recommended: CIS 133B or CIS 125D or instructor permission. Audit available.

CIS 135T XML and HL7 4.00 Presents design and creation of basic XML documents, namespaces, validation of an XML document using DTDs (Document Type Definitions) and schemas, importing and including XML schema domain information, XML schema intrinsic and user-defined data types, and combining XML with XHTML and Cascading Style Sheets. Discusses the advantages and disadvantages of XML design formats of Flat Catalog, Russian Doll and Venetian Blind. Introduces HL7. Recommend: CIS122 or instructor permission. Audit available.

CIS 140D Operating System: Microcomputers 4.00 Provides the basic concepts of Linux and Windows operating systems. Includes basic operating system functions, file/folder management, disk partitioning and formatting, operating system and application installation, and system configuration. See www.pcc.edu/cis. Recommended: CIS 120 or instructor permission. Audit available.

CIS 140M Operating Systems I: Microsoft 4.00 A first course in Microsoft operating systems administration including installation, configuration, and management. Command line and GUI tools used to organize, manage and maintain the file system are covered. Additionally students are introduced to users, groups, printing, profiles policies and the registry. Recommended: CIS 120 Audit available.

CIS 140S Perl Script Programming 1.00 Prepares students to install and configure Perl on Linux; design, implement, and test Perl scripts; debug Perl scripts; and locate, read and integrate information from a variety of technical sources. Recommended: Experience writing shell scripts and using Unix regular expressions as covered in CS 140U or equivalent. Audit available.

CIS 145 Microcomputer Hardware and Troubleshooting 4.00 Students will learn to identify, remove, and install standard components of a PC style microcomputer, including motherboards, CPUs, RAM, hard drives, removable media drives and power supplies. Additional topics include BIOS, CMOS, the boot process, video displays, printers, and home networking. Audit available.

CIS 178 Applied Internet Concepts 4.00 Introduces the Internet from a user’s perspective, with emphasis on productive, professional access. Topics include how to connect to the Internet, how to communicate with others, how to find and share information productively, as well as educational, business and social issues related to the Internet. Recommended: CIS 120 or instructor permission. Audit available.

CIS 179 Data Communication Concepts
COURSE DESCRIPTIONS

I 4.00 Provides basic concepts of data communications, networking and connectivity. Explores hardware, connectivity, signaling, addressing, network topologies, communication protocols, network designs, switching, management, TCP/IP protocols, security and standards with emphasis on the OSI reference model. Recommended: CIS 120 or instructor permission. Audit available.

CIS 185 Computer and Ethics 3.00 Discusses the ethical and social issues around the use of computer technology. Computer use has created unique ethical issues that are not addressed in traditional ethics. For computer professionals and even casual computer users, it’s imperative not only to explore what we can do with computer technology, but our ethical responsibilities in using that technology. CIS 185 and PHL 185 cannot both be taken for credit. Recommended: CIS 120; or instructor permission and college-level reading and writing. Prerequisite: WR 121 or instructor permission. Audit available.

CIS 187I Web Technical Administration 4.00 Internet connections, file transfers, e-mail notifications, and security systems. Investigates web system logs, web content backup strategies, and issues of web user accessibility and web site performance. Linux and Windows server operating system installations, configuration, and management in a virtual environment will be required. Command line commands and GUI tools will be used to organize, manage, and maintain the file system and web server software. Recommended: CIS 121 and CIS 122 or instructor permission. Audit available.

CIS 188 Introduction to Wireless Networking 4.00 Introduces the student to wireless networking theory and its practical application. Explores a variety of current and emerging wireless Local, Metropolitan and Wide Area Networking technologies. Topics may include: WiFi (802.11a/b/g/n), Bluetooth, WiMAX (802.16), 3G Cellular, and others. Includes hands-on design of wireless networks and the configuration of wireless Access Points. Recommend: CIS 179. Audit available.

CIS 189 Wireless Security 4.00 Introduces the student to wireless security intrusion, policies, tools, and solutions. Recommend prior knowledge: CIS 179 and CIS 188 Wireless Networking. Audit available.

CIS 195P PHP Web Development I 4.00 Introduces student to the server-side scripting language, PHP, and its use in the development of Web sites. Topics include web server, PHP and MySQL database installation, scripting, techniques, database manipulation, user authentication, tracking and session management and e-Commerce techniques. Recommend: Completion of CIS 122 and CAS 213 or CIS 233S or equivalent experience; concurrent enrollment in CAS 206 and CIS 178 or equivalent experience. Audit available.

CIS 225 End User Support 4.00 Prepares computer professional for providing training and support to end users. Includes the roles and responsibilities of the end-user support person; characteristics of the adult learner; and strategies and techniques for developing instruction, teaching technical subject matter and providing ongoing technical support. Recommended: CIS 120, WR 227, and three additional CIS courses or instructor permission. Additional lab hours may be required. Audit available.

CIS 233B Intermediate Visual Basic.NET Programming 4.00 Continues Visual Basic.NET programming sequence utilizing arrays, sorting, relational database access and data structures. Structured design techniques emphasized throughout. Recommended: CIS 133B or instructor permission; CIS 275 or instructor permission. CIS 275 may be taken concurrently. Audit available.

CIS 233J Java Programming II 4.00 Continues object-oriented programming from a software engineering and project oriented perspective. Includes class design, coupling and cohesion, refactoring, inheritance, advanced collections, abstract classes, interfaces, introduction to GUI building, introduction to Java database connectivity, and error handling. Recommended: (CIS 133J or CS 161) and CIS 275; or instructor permission.

CIS 233S Internet Web Page Scripting 4.00 Provides the foundation to build real-world, browser independent, web applications using client-side technologies including HTML, DHTML, Cascading Stylesheets and Javascript. Although the primary focus is on W3C Standards, Internet Explorer and Netscape specific extensions are discussed. A functioning website is built using the content presented in the course. Recommended: Proficiency in a modern programming language (CIS 133B, 133J or CS 161); or instructor permission. Audit available.

CIS 234B Advanced Visual Basic.NET Programming 4.00 Continues the Visual Basic.NET Programming sequence utilizing relational database access, multiple document interface and software objects and classes. Structured design techniques emphasized throughout. Recommended: CIS 233B, 275; or instructor permission. Audit available.

CIS 234J Java Programming III 4.00 Learn to use Java/J2EE to build scalable n-tiered web applications. Covers servlets, JSP, JDBC database connectivity, Enterprise JavaBeans, and SOAP Web Services Technologies. Learn advanced Apache Tomcat web server configuration including how to secure web resources, authenticate users and mask URLS. Recommended: CIS 233J or instructor permission. Audit available.

CIS 234N C# Programming 4.00 Presents an accelerated introduction to object-oriented programming in C# focusing on language features supported by .NET frameworks using the Visual Studio IDE and NUnit. Includes design, code and test projects involving namespaces; simple, abstract anonymous and partial classes; structures, enums and interfaces; delegates and events; exceptions; class, instance and anonymous methods, properties and indexers; LINQ, streams, generic collections, ADO databases, timers, and multithreading. Recommended: Experience with UML class diagrams, object-oriented concepts and a two-course sequence (or proficiency) in an object-oriented programming language. Audit available.

CIS 234S Web Application Development Using.NET 4.00 Provides the necessary knowledge to create real-world web applications using server-side technologies, including ASP.NET, VB.NET, and database access with ADO.NET. Although the primary focus is on the concepts, a business web-site is developed utilizing the presented material. Recommended: CIS 233S. Audit available.

CIS 240L Linux Installation and Configuration 4.00 Designed to prepare students for an entry-level position as an administrator of a system utilizing the Linux operating system. Focuses on knowledge and skills necessary for day-to-day operations on a Linux system using the command line. Recommended: CIS 140U. Audit available.

CIS 240M Managing a Windows Server Environment 4.00 The first of a three-term sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing Microsoft’s Windows operating systems. The course focuses on the knowledge and skills necessary to design, install, configure and manage a workgroup or domain consisting of Microsoft Windows servers and workstations. Recommended: CIS 140M. Audit available.


CIS 244 Systems Analysis 4.00 Provides overview of the system development life cycle (SDLC) emphasizing analytical techniques to develop the correct definition of business problems and user requirements. Students will prepare a feasibility assessment and develop system requirements for an assigned project. Recommended: One class in a high-level programming language and WR 227. One 200-level business administration course. Additional lab hours may be required. Audit available.

CIS 245 Project Management - Informa-
COURSE DESCRIPTIONS

Information Systems projects using modern management techniques. Complete hands-on projects requiring management of project resources, scope, time-line, cost, scheduling, human and other resources. Use Microsoft Project and other project monitoring tools. This course is one of the Project Management series that includes CAS 220, MSD 279, and BA 255. Project management is a broad term that can include many areas of business. Recommended: CIS 122, MSD 279, and CAS 220. Audit available.

CIS 277 Advanced Database Concepts in Oracle 4.00 Covers concepts with Oracle including PL/SQL programming concepts review. Includes design considerations for PL/SQL program units and packages. Advanced interface methods, features for PL/SQL, performance and tuning, and advanced features of Oracle supplied packages also covered. Recommended: CIS 276. Audit available.

CIS 277T Web Business Intelligence Application Development 4.00 Introduces fundamentals of Oracle Application Express 3.0, Web Application Development and Business Intelligence reporting using the newest ANSI 99 standard's features for SQL and OML. Covers fundamentals of Web Business Intelligence reporting and Web User Interface development. Recommended: CIS 276 or equivalent database experience. Audit available.

CIS 278 Data Communication Concepts II 4.00 Provides in-depth concepts of data communications, and networking. Explores network architectures, complex network designs and network hardware configuration. Includes a close look at network/telephone company interfaces. Work will principally be done in the laboratory. Students will have the opportunity to configure operating Cisco routers and other data communication equipment in order to build functional networks. Recommended: CIS 179. Audit available.

CIS 279L Linux Network Administration 4.00 First term of a sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing the Linux network operating system. Networking, TCP/IP, DNS, DHCP, NFS and Samba are covered. Recommended: CIS 240L Audit available.

CIS 280D Cooperative Education: Application Development Develop career objectives by linking their course work with off-campus learning experiences in computer information systems of the public/private sector organizations. Department permission required.

CIS 284 Network Security 4.00 Preparation for an entry level position as a network administrator, the course focuses on the knowledge and skills necessary to maintain system security and to install, configure and maintain a local area network with common internet applications. Use of Open Source software and CompTIA's Security+ certification are emphasized. Recommended: CIS 240M; or CIS 279L. Audit available.

CIS 285 Security Tools 4.00 Prepares network administrators to apply information security concepts and Open Source applications to manage security in Windows and Linux/Unix information systems. Topics include analysis and management tools, firewalls and packet filters, port and vulnerability scanners, sniffers, intrusion detection, encryption, wireless and forensics. Recommended: CIS 284 Audit available.

CIS 286 Computer Forensics 4.00 Introduces computer security administrators to computer forensics. Topics include setup and use of an investigator’s laboratory, computer investigations using digital evidence controls, processing crime and incident scenes, performing data acquisition, computer forensic analysis, e-mail investigations, image file recovery, investigative report writing, and expert witness testimony. Maps to the IACIS certification. Recommend: CIS 240L or CIS 240M Audit available.

CIS 287 Web Server Administration 4.00 Provides aspiring systems administrators with the knowledge and skill sets to install, configure, implement, and manage a web server. A variety of operating systems will be explored. Course does not cover publishing Web page content. Recommended: CIS 276 and either CIS 279M or CIS 279L Audit available.

CIS 287M Microsoft Server Security 4.00 Prepares IT security professionals working in medium to large computing environments to implement authorization and authentication strategies, use certificates and certificate authorities, use Encrypting File System, create secure baselines, use Software Update Services enhance data transmission security, wireless network security, perimeter security and secure remote access. The primary focus will be Windows Server with some client content. Maps to Microsoft certification exam. Prerequisite: CIS 240M or instructor permission. Audit available.

CIS 288M Microsoft Network Administration 4.00 Second of a three-term sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing Microsoft’s network operating system. Focuses on the knowledge and skills necessary to design, install, configure, and administer a network infrastructure that uses Microsoft Windows Server products. Recommended: CIS 240M or instructor permission. CIS 289M may be taken concurrently. Audit available.

CIS 289M Microsoft Active Directory Administration 4.00 Third of a three-term sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing Microsoft’s network operating system. Focuses on the knowledge and skills necessary to design, install, configure, and administer an enterprise network using Microsoft Windows Active Directory. Also focuses on implementing Group Policies and understanding Group Policy tasks required to centrally manage users and computers. Recommended: CIS 240M, or instructor permission. CIS 288M may be taken concurrently.
COURSE DESCRIPTIONS

CIS 295P PHP Web Development II 4.00
Introduces the advanced capabilities and features of PHP for Web site development. Topics include using the object-oriented features of PHP, developing applications for security and portability, advanced features of MySQL, creating efficient applications by implementing business logic within the database itself using stored procedures and triggers. Recommend: Completion of CIS 195P and CIS 125D or equivalent experience; concurrent enrollment in CIS 275 or equivalent experience. Audit available.

CRIMINAL JUSTICE

CJA 100 Professions in Criminal Justice 3.00
Provides overview of the various careers in the public safety professions, including police, corrections, parole and probation, juvenile and adult casework, private security, loss prevention, and private investigator. Prerequisites: Placement into WR 121. Audit available.

CJA 101 Cultural Diversity in Criminal Justice Professions 3.00
Provides introduction and familiarization with communication styles, customs, language and behavior patterns of various cultures, ethnic groups and non-traditional populations as employed by and encountered by criminal justice professionals; including police, corrections, parole and probation, juvenile and adult casework, private security, loss prevention, investigation and 911 communications. Prerequisite: Placement into WR 121. Audit available.

CJA 111 Introduction to Criminal Justice System - Police 3.00
Course designed to provide an overview of the role of police in society. Students will become familiar with general concepts related to law enforcement and be introduced to associated foundations and principles that comprise the criminal justice system. A range of issues and facts relevant to policing will be discussed. Included is historical development of police in America, crime data collection, police organization and structure, the police sub-culture, police and community relations, the police sub-culture, and warrantless searches and seizures. Case law, current events and critical threats are covered. Explores historical events, laws, issues, communications, critical threats and other topics related to protecting the national infrastructure. Prerequisites: Placement into WR 121. Audit available.

CJA 112 Introduction to Criminal Justice System - Courts 3.00
This course focuses on the United States criminal court systems including state, federal and miscellaneous other jurisdictions. It covers roles and functions of participants in the adjudication process including the prosecutor, defense attorney, defendant, victim, judge, jury, police and more. Also examined various criminal court procedures from arrest and arraignment through trial and sentencing. Prerequisite: Placement into WR 121. Audit available.

CJA 113 Introduction to the Criminal Justice System - Corrections 3.00
Covers theories and current practices in correctional treatment, crime prevention, contemporary criminal justice services and treatment methods, and professional career opportunities. Prerequisites: Placement into WR 121. Audit available.

CJA 114 Introduction to Juvenile Process 3.00
Introduces history and philosophies of juvenile adjudication and corrections. Covers current programs in Oregon available to juveniles who are or have been involved in the justice system. Provides a focus on integrating theories of causation, juvenile law, and procedural requirements. Prerequisites: Placement into WR 121 (or instructor permission). Audit available.

CJA 115 Introduction to Jail Operations 3.00
Introduces jail operations including security, intake, classification and other daily procedures concerning inmates. Problems and issues facing contemporary jails will be explored and possible solutions studied. Prerequisites: Placement into WR 121. Audit available.

CJA 116 Juvenile Risk Assessment 3.00
Covers fundamentals of assessing juveniles at risk of becoming involved in serious delinquent behavior. Focuses on specific types of problems such as violence, chemical dependency and sexual offending. Youth treatment programs will also be examined. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisites/concurrent: CJA 114. Audit available.

CJA 117 Introduction to Homeland Security 3.00
Introduces Homeland Security and its function of coordinating efforts to develop and implement a comprehensive national strategy to secure the nation from terrorist threats or attacks. Agencies associated with Homeland Security along with their duties and relationships are covered. Explores historical events, laws, issues, communications, critical threats and other topics related to protecting the national infrastructure. Prerequisites: Placement into WR 121. Audit available.

CJA 118 Criminal Justice Perspectives 3.00
Introduces criminal justice perspectives. Emphasizes episodically violent individuals, their detection, treatment methods and violence prevention in the area of crisis intervention. Presents the tools and techniques of crisis intervention through discussion, demonstrations, simulation and role playing. Prerequisites: CJA 100; WR 121. Audit available.

CJA 210 Arrest, Search and Seizure 3.00
Covers issues and procedures regarding stops, frisks, searches and seizures. The Fourth Amendment of the United States Constitution and Article 1, Section 9 of the Oregon State Constitution are discussed. Topics include stops, arrests, privacy issues, search warrants and warrantless searches and seizures. Case law, current events and statutory law from the Criminal Code of Oregon are reviewed. Prerequisites: CJA 100, CJA 111 and WR 121 or instructor permission. Audit available.

CJA 211 Civil Liability and Ethics in Criminal Justice 3.00
Explores the conduct and ethics of criminal justice practitioners that give rise to civil liability. Particular attention is paid to aspects of risk management to help prevent legal claims. Prerequisites: CJA 100, CJA 111 and WR 121 or instructor permission. Audit available.

CJA 212 Criminal Law 3.00
Introduces substantive criminal law including basic principles of criminal liability, constitutional aspects, defenses and accomplice liability. Elements of specific crimes are covered and court decisions interpreting statutes are analyzed. Prerequisites: CJA 111; WR 121. Audit available.

CJA 213 Evidence 3.00
Explores the rules regarding the use of evidence according to state and federal laws. A wide variety of topics are introduced relating to evidence including collection, preservation, chain of custody, admissibility and exclusion at trial. Prerequisites: CJA 111; WR 121. Audit available.

CJA 214 Criminal Investigation 3.00
Introduces modern investigative methods, including the collection and preservation of physical evidence, scientific aids, sources of information, interviews, follow-up and case presentation. Includes techniques of interview and interrogation. Prerequisites: CJA 111; WR 121. Audit available.

CJA 215 Forensic Science and Criminalistics 3.00
Explores how scientific principles help in crime detection and solution. Familiarizes students with analysis of fingerprints, DNA, body fluids, and other evidence that may be contained at a crime scene. Prerequisites: WR 121. Audit available.

CJA 217 Interviewing and Interrogation 3.00
Presents knowledge and working skills in the art of interviewing and interrogation. Prerequisites: CJA 100, 111; WR 121. Audit available.

CJA 218 Criminal Justice Perspectives of Violence & Aggression 3.00
Explores and analyzes violence and aggression as viewed from biological, psychological, psychiatric and sociological perspectives. Emphasizes episodically violent individuals, their detection, treatment methods and violence prevention in the area of crisis intervention. Presents the tools and techniques of crisis intervention through discussion, demonstrations, simulation and role playing. Prerequisites: CJA 100; WR 121. Audit available.

CJA 225 Criminal Justice and the United States Constitution 3.00
Provides a broad overview of United States Constitutional Laws as it relates to professions in the criminal justice field. Examines Articles and Amendments of the U.S. Constitution, focusing on the 1st, 6th, 8th, 14th amendments and “penumbras.” Focuses on freedom of speech, religion and assembly as these rights relate to limitations on police authority. Prerequisites: CJA 100; WR 121. Audit available.

CJA 228 Organized Crime and Terrorism 3.00
Provides information on organized crime, its development, growth and impact on society and criminal justice processes. Includes crime families, terrorists, gangs and fringe groups with criminal intentions, their detection, investigation and combat. Prerequisites: CJA 100; WR 121. Audit available.

CJA 230 Police Report Writing 4.00
Course is designed to teach students police report writing skills.
COURSE DESCRIPTIONS

Emphasized are techniques appropriate to narrative structures necessary for operational police reports. Included are legal aspects, content, organization and grammar. The focus is to produce a quality police report capable of withstanding courtroom scrutiny. Prerequisite: WR 227; CJA 210 and 212. Audit available.

CJA 231 Crime Scene Photography 3.00 Introduces crime scene photography skills to aid in crime scene and evidentiary documentation. Includes camera operation, exposure control, proficiency in relational photos, close-up photography, lighting, flash control and videography. Prerequisite: WR 121 and CJA 111. Audit available.

CJA 243 Narcotics and Dangerous Drugs 3.00 Covers history and causes of narcotic and drug problems, how to identify drug addicts and drug abusers, how to define and classify various types of narcotics and dangerous drugs, including laws and other controls and rehabilitation programs. Prerequisites: CJA 100; WR 121. Audit available.

CJA 244 Tactical Communication in Crisis Incidents 3.00 This course focuses on police intervention in the lives of people in the midst of an emotional or physical crisis in the manner designed to minimize or prevent violence while gaining control of the situation. Emphasized are verbal and non-verbal communication techniques and skills utilized to calm the client and gain compliance helping to lead to a successful and safe resolution. Prerequisites: Placement into WR 121 (or instructor permission). Audit available.

CJA 245 Search Warrant Preparation 3.00 Covers legal concepts in search warrant preparation and focuses on learning to draft legal documents comprised of probable cause statements and judicial orders. Particular attention is paid to strengthening legal writing and evidence gathering in preparation for warrant application. Prerequisites: CJA 210 and WR 227. Audit available.

CJA 246 Fish and Wildlife Enforcement 3.00 Covers fish and game laws and their relation to wildlife management. Focuses on enforcement processes and techniques including investigation, fish and wildlife forensics, evidence handling, proper citation and report completion in preparation for courtroom presentation. Prerequisites: CJA 111 and WR 212. Audit available.

CJA 247 Introduction to Criminal Gangs 3.00 Provides information on criminal street gangs and their impact on American society. Student will become familiar with general concepts related to law enforcement interaction with gangs including suppression, intervention, and educational tactics. Prerequisite: CJA 111 and WR 212. Audit available.

CJA 260 Introduction to Correctional Institutions 3.00 Provides an overview of correctional facilities including prisons, jails, treatment and work release facilities. Introduces the effects of incarceration on inmates and their adaptive strategies. Introduces various intervention modalities and reintegration programs back into the community. Prerequisites: CJA 113 and WR 212. Audit available.

CJA 261 Introduction to Probation and Parole 3.00 Introduces Community Corrections or probation and parole in the management of offender behavior. Discusses Management of Community Corrections agencies and community intervention with offenders. Prerequisite: CJA 100, 113. Audit available.

CJA 262 Introduction to Correctional Treatment 3.00 This course provides an overview of correctional treatment within the criminal justice system. It provides insight into the role and purpose of effective correctional treatment strategies and programs, including the responsibilities of providers and clients. Prerequisites: CJA 100 and CJA 113. Audit available.

CJA 263 Introduction to Corrections Casework 3.00 Introduces the process of casework and case management in a correctional setting. Develops both a theoretical and practical base of knowledge to allow the student to develop counseling techniques. Prerequisite: CJA 100, 113. Audit available.

CJA 264 Introduction to Corrections Administration 3.00 This course provides an overview of the administration and management of corrections facilities, programs and field services. It provides insight into the role and purpose of effective management strategies for the professional delivery of correctional services. Prerequisites: CJA 100 and CJA 113. Audit available.

CJA 265 Community Reentry for Offenders 3.00 Provides an overview of the role and responsibilities of the community jail and prison in preparing offenders for reentry into a lawful place within the community. Covers the steps necessary to prepare the offender for release, offender skills assessment processes, brokering employment opportunities and resources as well as other methods to support offenders while returning to positive lawful roles in the community. Prerequisites: CJA 113 and WR 212. Audit available.

CJA 279 Criminal Justice Seminar Designed for criminal justice agencies offering special topic seminars to meet the information and training needs of local criminal justice agencies. Audit available.

CJA 280A Cooperative Education: Criminal Justice Students participate with various public sector criminal justice agencies to learn about their structure and function. The field placement must be program-related. Department permission required prior to registration. Prerequisite: CJA 100 and (CJA 111 or CJA 113).

CJA 280B Cooperative Education: Applied Criminal Justice Offered to students employed by a public sector criminal justice agency to increase professional skills and knowledge. Prerequisite: Department permission required. See CJA advisor. Audit available.

CIVIL & MECHANICAL ENGINEERING

CMET 110 Statics 4.00 Covers fundamental concepts of mechanics relating to forces acting on rigid bodies. Includes problems involving actions and reactions on structures and machines in two and three dimensions. Also covers friction, moments of inertia, and centroids. Corequisite: CMET 111. Prerequisite or concurrent: CMET 112. Prerequisites: MTH 60 and placement in WR 115. Department approval required. Audit available.

CMET 111 Engineering Technology Orientation 4.00 A rigorous practical approach to techniques and problems encountered in the field of engineering technology. Offers abundant opportunity to solve engineering problems. Corequisite: CMET 110. Prerequisite or concurrent: CMET 112. Audit available.

CMET 112 Technical Algebra/Trigonometry 4.00 Includes algebra and trigonometry used in CMET 110 and 111, emphasizing simultaneous linear equations, quadratic equations and applied problems. Prerequisites: MTH 60 and placement in WR 115. Department approval required. Audit available.

CMET 113 Engineering Technology Graphics 3.00 Introduces manual and computer-aided drafting including hand sketching, drafting standards, pictorial drawings, and dimensioning. Includes creation of 2-D drawing and 3-D solid models using AutoCAD Software. Prerequisite: Placement in WR 115. Prerequisite or concurrent registration: MTH 60 or CMET 112. Audit available.

CMET 121 Strength of Materials 4.00 Covers the relationship between stress and strain in deformable solids. Analysis is applied to circular shafts, beams, columns and pressure vessels. Covers combined stresses, statically indeterminate systems and properties of structural materials. Prerequisites: CMET 110, 112, 113. Prerequisite or concurrent: CMET 122, 123. Audit available.

CMET 122 Technical Engineering Physics 4.00 Introduces physical properties of matter and energy, includes properties of solids, liquids and gases. Presents applications of the basic equations of fluid mechanics, heat transfer, and the First Law of Thermodynamics. Prerequisite or concurrent: CMET 121, 123. Audit available.

CMET 123 Technical Algebra with Analytic Geometry 4.00 Covers algebra and geometry of special interest to engineering technicians including solving higher order equations, determinants, matrix operations, logarithms and trigonometric identities. Plane analytical geometry introduced in preparation for calculus, emphasizing development of skills and confidence to solve advanced pre-calculus problems. Prerequisite: CMET 112, or MTH 111. Audit available.
COURSE DESCRIPTIONS

CMET 132 Plane Surveying 3.00 Basic concepts of plane surveying are introduced. Includes use of tape, level, transit, electronic total station (ETS), along with horizontal and vertical control networks. Includes network calculations and adjustments; angles and bearings and topographic surveying and mapping. Prerequisite or concurrent: (CMET 123 or MTH 112) and CMET 113. Audit available.

CMET 133 Materials Technology 3.00 Selection of materials for engineering technology applications, structure and properties of metals, ceramics and polymers starting with fundamental atomic arrangements. Microstructural control through thermal and mechanical processing and effects of service environment are covered. Prerequisite: CMET 121, 123; CH 104; WR 115. Audit available.

CMET 211 Environmental Quality 4.00 Introduces physical, chemical and biological parameters relating to the quality of water. Presents sampling systems, data analysis techniques and computational methods, including mathematical models. Recommended: CMET 131. Prerequisite: CMET 123, CH 104, and WR 115. Prerequisite or concurrent: WR 121. Audit available.

CMET 212 Thermodynamics I 4.00 Covers principles of classical thermodynamics. Develops understanding of mass, energy, heat, work, efficiency, ideal and real thermodynamic cycles and processes. Teaches first and second laws of thermodynamics, perfect gas law, properties of real gases, and the general energy equation for closed and open systems. Prerequisites: CMET 131, CMET 122 and CH 104. Audit available.

CMET 213 Fluid Mechanics 3.00 Covers properties, laws of fluid mechanics and energy relationships for incompressible fluids. Studies flow in closed conduits, including pressure loss, flow measurement, pipe sizing and pump selection. Includes open channel flow analysis. Recommended: CMET 131. Prerequisites: CMET 110, 122, 123. Audit available.

CMET 214 Route Surveying 3.00 Presents techniques for preliminary, location and construction surveys related to roads and pipelines. Includes elements of horizontal and vertical location, including circular, spiral and parabolic curves. Draw plans, profiles and cross sections and use electronic total stations. Prerequisite: CMET 132. Audit available.

CMET 215 Manufacturing Processes 3.00 Covers today’s global economy and solutions to problems of manufacturing enterprise. Factors addressed: statistical process/quality control, robotics, CAD, CAM, DFA/DFM, and CIM. Traditional and nontraditional manufacturing processes covered. Prerequisites: CMET 121, 122; WR 115. Prerequisite or concurrent: CMET 133. Audit available.

CMET 221 Environmental Systems 4.00 Explores ground water, air, hazardous waste, and water pollution problems. Addresses technological solutions of these problems, including water, waste water, and air pollution treatment, as well as alternatives. Prerequisite: CMET 123, WR 115. Audit available.

CMET 222 Thermodynamics II 4.00 Covers application of principles of thermodynamics in the analysis of vapor and gas power cycles, refrigeration and heat pump machinery, and air distribution systems. Combustion reactions, ideal gas mixtures, and properties of moist air (psychrometrics) are also studied. Prerequisite: CMET 212. Audit available.

CMET 223 Project Management 3.00 Administration of engineering projects. Covers owner-design professional-contractor relationships, law and contracts, specifications writing and interpretation, cost estimating, engineering economy, and planning and scheduling (CPM and time-scaled arrow diagrams). Recommended: SP 100 or 111. Prerequisites: CMET 123. Prerequisite or concurrent: WR 121. Audit available.

CMET 226 Dynamics 3.00 Covers kinematics and kinetics principles relating to the motion of particles and rigid bodies. Examines force, mass, acceleration and velocity relationships. Practical linear and curvilinear motion problems are solved. Work-energy and impulse-momentum methods covered. Prerequisite: CMET 110, 131. Audit available.

CMET 227 Applied Electricity Fundamentals 2.00 Introduces fundamental principles of electricity as applied to mechanical systems. Principle topics covered: basic electrical theory, electric motors, controls, and energy consumption considerations. Prerequisite: CMET 112. Audit available.

CMET 228 Construction Materials 3.00 Covers production, processing, and testing of aggregate, asphalt, concrete, soil and other materials in highway and commercial/industrial building projects. Includes quality assurance concepts, measurements and calculations, terminology and random sampling. Focuses on testing procedures common to construction in the northwest. Recommended: CMET 131. Prerequisites: CMET 121, 122, 123. Prerequisite/concurrent: WR 121. Audit available.

CMET 233 CET Applied Computer Aided Design 3.00 Presents advanced topics in civil engineering oriented computer aided design and drawing meeting industry standards. Prerequisite: CMET 113, CMET 241. Prerequisite/concurrent: CMET 214. Audit available.

CMET 235 Machine Design 3.00 Examines fundamentals of machine design, including analysis and design of mechanical components. Covers shafts, fasteners, belt and chain drives, brakes, gears, springs and bearings. Includes predicting static and fatigue failures for various loadings and materials. Prerequisite: CMET 121, 226. Audit available.

CMET 236 Structural Design 3.00 Introduces design of steel, wood, and reinforced concrete structures with emphasis on steel buildings. Covers beam and column design along with bolted and welded connections. Recommended: CMET 131. Prerequisites: CMET 121, 122, 123; WR 115. Audit available.

CMET 237 MET Applied Computer Aided Design 3.00 Presents advanced topics in mechanical/manufacturing engineering oriented computer aided design and drawing meeting industry standards. Prerequisites: CMET 113, Audit available.

CMET 241 Structural Steel Drafting 3.00 Introduces structural detail drafting of engineering design drawings and shop fabrication drawings for steel construction. Covers steel grades and shapes, and design, fabrication, and erection drawings for steel structures. Prerequisites: CMET 113, 121. Audit available.

CMET 254 Civil/Mechanical Engineering Technology Seminar 1.00 Topics include information on finding employment in the civil/mechanical/manufacturing industry, writing resumes, and interviewing. Prerequisite: WR 115. Audit available.

CMET 280A Cooperative Ed: Civil/Mechanical Engineering Technology An opportunity to develop engineering technology skills in a department-approved work setting. Department permission required. Audit available.

COMPUTER SCIENCE

CS 133G Introduction to Computer Games 4.00 Introduces fundamentals of computer game development, including a survey of computer game categories and platforms, major game components, the game development process, and game graphics. Design and development of elementary two-dimensional computer games. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent or equivalent placement test scores. Audit available.

CS 133U C Programming 4.00 Introduces computer programming through development of C programs to solve practical problems. Recommended: CS 160. Audit available.

CS 140U Introduction to UNIX 4.00 Introduces the UNIX/Linux operating system, including: task scheduling and management, memory management, input/output processing, internal and external commands, shell configuration, and shell customization. Explores the use of operating system utilities such as text editors, electronic mail, file management, scripting, and C/C++ compilers. Discusses trends in UNIX/Linux, including use of graphical user interfaces. Recommended: CS 160. Audit available.
**COURSE DESCRIPTIONS**

**CS 160 Exploring Computer Science 4.00**
Explores the field of computer science. Provides an overview of computer architecture, software development engineering, data organization, problem-solving strategies, ethics, and theory of computation. Explores career options and develops rudimentary software development skills. Recommended: Computer Literacy (such as completion of CIS 120); placement at MTH 65 and RD 115. Audit available.

**CS 161 Computer Science I 4.00**
Introduces the concepts of computer science. Explores problem solving, algorithm and program design, data types, loops, control structures, subprograms, and arrays. Introduces writing programs in a high level programming language. Surveys current social and ethical aspects of computer science. Recommended: MTH 111B or MTH 111C, WR 121, and CS 160. Audit available.

**CS 162 Computer Science II 4.00**
Explores classes, pointers, dynamic memory, linear linked lists, multi-dimensional arrays, program correctness, verification, and testing. Prerequisite: CS 161. Recommended: MTH 112 and WR 121. Audit available.

**CS 160 Programming Systems 4.00**
Explores the theory and practice of object-oriented programming as embodied in both Java and C++. Introduces inheritance, polymorphism, virtual functions, templates, exceptions, operator overloading and the extensive libraries that are available as a standard part of Java and C++. Prerequisite: CS 260. Audit available.

**CSS 200 Soils and Plant Nutrition 4.00**
Examines soils and plant interrelationships. Introduces soil development and terms, physical, biological, and chemical properties, and the use of organic and inorganic means to provide optimum environment for plant growth. Recommended: MTH 60 or instructor permission. Audit available.

**DANCE**

**D 120 Pilates for Dancers 1.00**
Builds on concepts and skills in the Pilates Method of conditioning. Designed to continue to increase core strength and stabilization, by challenging one’s body to further its range of motion. Provides knowledge and skills in non-impact whole body exercise that includes standing variations to further challenge the student as it pertains to dance. Benefits include core strength and stabilization, muscle tone, flexibility, improved posture and body/mind awareness. Recommend: Pilates II or instructor permission. Audit available.

**D 121 Conditioning for Dance 1.00**
Examines somatic practices and conditioning methods as they pertain to dance training. Develops kinesthetic awareness, strength, flexibility, stability and greater efficiency in movement. Focus may vary from term to term. May be taken a total of three times for credit. Audit available.

**D 150 Jazz Dance I 1.00**
Introduces principles
and skills in the fundamentals of jazz dance technique. Emphasizes and develops correct body alignment, coordination, strength, flexibility, rhythm, and movement awareness. Includes jazz dance vocabulary and simple jazz dance combinations. Course may be taken 3 times for credit (D 150 or PE 186F separately or in combination). Audit available.

D 151 Jazz Dance II 1.00 Continues development of jazz dance technique at the beginning/intermediate level. Emphasizes increased coordination, strength, control, flexibility, stamina, musicality, and jazz dance vocabulary in more challenging combinations. Course may be taken 3 times for credit (D 151 or PE 186G separately or in combination). Recommended courses: D 150, or PE 186F, or equivalent. Audit available.

D 152 Introduction to Dance 2.00 Introduces fundamentals of dance technique including training in movement styles from a variety of disciplines. Focuses on correct alignment, development of strength, flexibility, range of motion, and stability, dance specific terminology, and musicality. Provides students with a foundation for Ballet, Modern, and Jazz. Audit available.

D 169 Musical Theater Dance 2.00 Covers dance forms and styles used in the musical theater choreography. Covers basic techniques, vocabulary, and dance excerpts from musical theater shows. Course may be taken 3 times for credit. Recommended courses: Two dance technique courses or previous dance training. Audit available.

D 170 World Dance 2.00 Introduces traditional and popular dance forms and styles from a selection of countries and cultures. Examines and practices dance movement within a cultural context. Ethnic dances may vary by term. Course may be taken 3 times for credit. Audit available.

D 175A Tap Dance I 1.00 Introduces fundamentals of tap dance technique and vocabulary. Develops a sense of timing, rhythm, musicality. Emphasizes basic traditional tap steps, rhythm tap combinations and complete dances. Course may be taken 3 times for credit (D 175A or PE 186K separately or in combination). Audit available.

D 175B Tap Dance II 1.00 Continues the development of tap dance techniques beyond introductory level. Further develops a sense of rhythm, musicality, and tap sounds. Learn basics through intermediate traditional tap steps, rhythm tap combinations, and complete dances. Recommended courses: D 175A, or PE 186K, or equivalent. Audit available.

D 177 Hip Hop 1.00 Introduces the fundamental principles and skills of Hip Hop dance. Places emphasis on development of correct technique, strength and flexibility, musicality, and individual expression through movement. Focuses on Hip Hop elements, culture, and terminology. May be taken a total of three times for credit as either D 177 or PE 186R. Audit available.

D 177B Hip Hop II 1.00 Continues the development of Hip Hop dance at an intermediate level with a focus on longer, more challenging phrases and performance aspects. Emphasis will be placed on the development of correct technique, strength and flexibility, musicality, and individual expression through movement. Course may be taken a total of three times for credit as either D 177B or PE 186S. Prerequisite: D 177 or PE 186R or instructor approval. Audit available.

D 184 Ballroom Dance I 1.00 Introduces the fundamental principles of Ballroom Dance. Places emphasis on proper partnering, style, and phrasing. Focuses on elementary steps of Foxtrot, Waltz, Swing, Cha-Cha, and Rumba. May be taken a total of three times for credit as either D 184 or PE 186D. Audit available.

D 184B Ballroom II 1.00 Continues the development of skills in ballroom dance at an intermediate level as well as enriching the depth of the dance technique and complexity of choreography. Focus is placed on: appropriate partnering in order to lead or follow, rhythm, style, and phrasing. Dances may include: Waltz, Foxtrot, Tango, Quickstep, Rumba, Cha-Cha, Swing, Samba, Jive, and Night Club Two Step. Course may be taken a total of three times for credit as either D 184B or PE 186E. Prerequisites: D 184 or PE 186D or instructor approval. Audit available.

D 192A Ballet I 1.00 Develops skills and examines principles in the fundamentals of classical ballet technique. Emphasizes correct alignment, basic barrel and center work, traveling steps, and ballet vocabulary. Course may be taken 3 times for credit (D 192A or PE 186A separately or in combination). Audit available.

D 192B Ballet II 1.00 Continues development of knowledge and skills in classical ballet technique beyond the beginning level. Emphasizes correct alignment, increased speed, strength, flexibility, balance, coordination, and ballet vocabulary in more challenging combinations. Course may be taken 3 times for credit (any combination of D 192B or PE 186B for a total of 3 times). Recommended courses: D 192A, or PE 186A, or equivalent. Audit available.

D 192C Modern Dance I 1.00 Introduces knowledge and skills in beginning modern dance technique. Includes dance fundamentals, vocabulary, and improvisation, emphasizing correct alignment, coordination, strength, and awareness of movement. Course may be taken 3 times for credit (D 192C or PE 186I separately or in combination). Audit available.

D 192D Modern Dance II 1.00 Continues development of modern dance technique, with focus on alignment, strength, control, musicality, and dynamics. Includes expanded modern dance vocabulary, dance combinations, and improvisation. Course may be taken 3 times for credit (D 192D or PE 186J separately or in combination). Recommended courses: D 192C or PE 186I or equivalent. Audit available.

D 209 Dance Performance Offers practical experience in rehearsing and presenting a dance performance. Course may be taken 3 times for credit. Recommended courses: Previous dance training or audition. Audit available.

D 251 Dance Appreciation 4.00 Develops an awareness and appreciation of dance in its artistic, social, historical, and cultural contexts. Considers aspects of dance as cultural, spiritual, and aesthetic expression, exploring origins and the related roles of the dancer, choreographer, and spectator. Offers a variety of experiences, including the viewing of dance in live and recorded formats, reading about dance, discussing dance, and hearing from guest experts. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

D 260 Dance Improvisation 1.00 Explores movement invention and spontaneous choices through the exploration of improvisation techniques, scores, and games through structured and open improvisations, group discussion and observation, and the incorporation of a variety of media. Concurrent registration in a dance technique class and/or previous dance training is recommended. May be taken a total of two times for credit. Audit available.

D 270 Introduction to Choreography 2.00 Introduces students to the principles and practice of dance choreography. Emphasis will be placed on: generating movement through improvisation and source exploration; manipulation of movement; choreographic forms; the creation and performance of short movement studies; and dance observation and critique. Audit available.

D 292 Ballet III 1.00 Continues development of classical ballet technique at the intermediate level. Emphasizes correct alignment, increased speed, strength, flexibility, balance, coordination, and ballet vocabulary in longer, more challenging combinations. Course may be taken 3 times for credit (any combination of D 292 or PE 286B for a total of 3 times). Recommended courses: D 192B, or PE 186B, or equivalent. Audit available.

D 292D Modern Dance III 1.00 Continues the development of Modern Dance technique at the intermediate level with a focus on longer, more challenging dance phrases and performance aspects. Course may be repeated up to three times for credit. Prerequisite: D 192D or PE 186J or instructor permission. Audit available.
DENTAL ASSISTING

DA 110 Clinical Procedures I 3.00 Introduction to clinical dental assisting including operator preparation, sterilization/disinfection procedures, dental equipment, tray set-ups and restorative dental procedures.

DA 111 Clinical Procedures I (Lab) 2.00 Laboratory training and experience in basic dental assisting functions and responsibilities. Students progress to assisting dentists in the dental clinics.

DA 112 Clinical Procedures II 1.00 Intermediate clinical dental assisting with instruction in oral examination, charting and other procedures. PREREQ: DA 110.

DA 113 Clinical Procedures II (Lab) 3.00 Continued clinical and laboratory experience. Students spend 1 (one) day per week assisting dental students at the Oregon Health Sciences University Dental School.

DA 114 Clinical Procedures III 1.00 Advanced clinical dental assisting with instruction in dental specialty procedures.

DA 115 Clinical Procedures Lab III 5.00 Advanced clinical experience, including dental specialty procedures. Students spend three days per week in dental office internships.

DA 118 Expanded Duties I 1.00 Study of the function and procedures beyond the scope of general dental assisting as allowed by the Oregon Dental Practice Act. Includes amalgam polishing and margination, rubber dam placement and removal.

DA 119 Expanded Duties II 1.00 Continued study of expanded duties to include coronal polishing, cement removal, and other areas needed to meet changes in the field.

DA 120 Dental Radiology I 2.00 Introduction to the uses of radiographic images in dentistry, including the history, physical and chemical properties, biological effects and safety principles.

DA 121 Dental Radiology I (Lab) 2.00 Practices radiographic techniques on manikins and correlate activities to the DA 120 lecture.

DA 122 Dental Radiology II 1.00 Continued study of the philosophy and principles of dental radiography with review and preparation for National and State certification examinations.

DA 123 Dental Radiology II (Lab) 2.00 Continued experience with radiographic techniques on manikins and clinic patients under direct supervision.

DA 125 Dental Radiology III (Lab) 2.00 Advanced x-ray clinical experience to include extra-oral and x-rays for children and edentulous patients. Radiographic experience during private practice internships.

DA 130 Dental Materials I 1.00 Basic physical and chemical properties of dental materials including resins, gypsum products, impression materials, waxes, cements and bases.

DA 131 Dental Materials I (Lab) 2.00 Lab activities prepare students in the proper handling and manipulation of the materials studied in DA 130 lecture.

DA 132 Dental Materials II 1.00 Continued study of dental materials to include those used specifically in the processes of crown and bridge construction.

DA 133 Dental Materials II (Lab) 2.00 Students continue to develop skills in the handling and manipulation of dental materials as described in the DA 132 lecture.

DA 135 Dental Materials III (Lab) 2.00 Advanced laboratory activities designed to improve proficiency and efficiency in the handling and manipulation of dental materials. Students apply knowledge and skills in dental office internships.

DA 140 Integrated Basic Science I 3.00 Fundamental principles of human anatomy and physiology, plus study of tooth form and function. Introduction to dental embryology, microbiology and pathology included.

DA 142 Integrated Basic Science II 2.00 Specialized study of the structures of the head and neck with emphasis on the oral cavity.

DA 150 Dental Office Procedures I 2.00 Overview of procedures associated with reception desk responsibilities and dental office management.

DA 152 Dental Office Procedures II 2.00 Comprehensive course that includes oral and written communication, computer skills and job search techniques. All study is related to dentistry. Recommended: typing/keyboarding skills.

DA 156 Ethics and Jurisprudence 1.00 Covers ethical standards established by the dental professions and legal responsibilities of the dental assistant and the dentist as established by the Oregon Dental Practice Act. The legal responsibilities and obligations of the dental assistant and the dentist are also taught.

DA 160 Dental Pharmacology 1.00 Become familiar with medications and drugs used by the dentist in treating patients.

DA 9406 Dental Assisting Practicum Upgrading for dental assistants who have been out of the field for a prolonged period of time, or who feel their skills are out of date.

DE 21 Introduction to Information Literacy 1.00 Introduces students to the skills used to formulate a research query, emphasizing intellectual curiosity, creative thinking, and persistence in information seeking activities. Students learn and practice research as a multi-step process: identifying an information need and selecting a topic; formulating a question; locating and selecting varied and appropriate print and electronic sources; using critical reading and thinking to evaluate information; and paraphrasing and citing sources. Use of library resources is required, including contacting Reference Librarians for research assistance. This course is offered as a co-requisite to RD 80. Audit available.

DE 31 Learning Skills I 1.00 Introduces study skills required in college. Principle topics include motivation, goal setting, time management, organization of college, and study suggestions and techniques. Course may be taken alone or as part of a three-credit series (DE 31, 32, 33). Audit available.

DE 50 Vocabulary Building 1.00 Topics include determining word meaning, parts of speech, pronunciation, spelling, and writing with new vocabulary. Recommend for students in developmental and preparatory reading and writing classes. Prerequisites: Reading COMPASS score 44-65 or successful completion of ESOL 250 with a “C” or better. Audit available.

DE 51 Building Academic Vocab in Content Areas: Science/Literature 2.00 Includes determining word meaning, parts of speech, pronunciation and spelling of core vocabulary needed to read and comprehend content-rich materials in the areas of science and literature. Prerequisite: Program permission required. Audit available.

DE 52 Building Academic Vocab in Content Areas: Social Science/Math 2.00 Includes determining word meaning, parts of speech, pronunciation and spelling of core vocabulary needed to read and comprehend content-rich materials in the areas of social sciences and mathematics. Prerequisite: Program permission required. Audit available.
to include the more difficult oral conditions and special needs.

**DH 104 Dental Hygiene Practice I 3.00** Applies dental hygiene theory and techniques in a laboratory setting on dental manikins. Work with patients will begin when specified skill levels are reached.

**DH 105 Dental Hygiene Practice II 3.00** Students apply dental hygiene preventive and therapeutic principles while providing patient care in a clinical environment. Patient care includes oral prophylaxis and oral hygiene. Co-requisite: DH 102

**DH 106 Dental Hygiene Practice III 3.00** Continued clinical activities with increased difficulty in the type and number of cases.

**DH 109 Dental Radiology I 2.00** Instruction covers basic theory of dental radiography. Students practice intra-oral techniques on manikins with emphasis on radiation safety practices and techniques.

**DH 109L Dental Radiology I (Lab) 1.00**

**DH 110 Cariology 2.00** Studies the biological basis for the treatment of dental caries as an infectious disease process. Preventive measures and treatment modalities will be discussed.

**DH 113 Dental Anatomy 2.00** Studies anatomical characteristics of all permanent and deciduous teeth and their surrounding tissues.

**DH 113L Dental Anatomy (Lab) 1.00**

**DH 121 Oral Health Education and Promotion 1.00** Familiarizes the student with selected teaching techniques having direct application to oral health education concepts.

**DH 127 Medical Emergencies 2.00** Study of medical emergencies that occur in the dental office including prevention, recognition and appropriate intervention.

**DH 128 Oral Histology 2.00** Introduces microscopic anatomy and embryology of the oral tissues.

**DH 129 Oral Pathology 3.00** Studies oral diseases and recognition of conditions that may require consultation and treatment by a dentist prior to, or concurrent with dental hygiene procedures. Prerequisites: DH 128; BI 122 or BI 232.

**DH 130 Oral Histology Independent Study 1.00** The continued study of microscopic anatomy, histology and embryology of the oral tissues. Serves as an introduction to the study of oral pathology. Prerequisite: BI 122 or BI 232. Prerequisite/concurrent: DH 128.

**DH 201 Dental Hygiene Theory IV 2.00** Dental hygiene theory applied to patients having periodontal disease; instruction includes comprehensive patient management. Co-requisites: DH 204 or DH 204B.

**DH 202 Dental Hygiene Theory V 3.00** Advanced dental hygiene theory applied to patients having moderate to severe periodontal disease and provision of a variety of expanded dental hygiene functions. Co-requisite: DH 205

**DH 203 Dental Hygiene Theory VI 2.00** Continues dental hygiene theory. Includes the emerging role of the dental hygienist in collaboration with general health providers in alternative setting and independent practice settings. Includes job search skills and stress management.

**DH 204 Dental Hygiene Practice IV 5.00** A continuation of clinical activities to include treating periodontal patients and patients with heavy deposits; activities will correlate to theory lecture course DH 201. Co-requisite: DH 201

**DH 204A Dental Hygiene Practice IV 1.00** Continues clinical activities to include treating beginning periodontal disease and moderate deposit patients. Prerequisites: DH 103 and DH 106.

**DH 204B Dental Hygiene Practice IV 4.00** Continues clinical activities to include treating moderate periodontal patients and patients with moderate/heavy deposits; activities will correlate to theory lecture course DH 201. Prerequisite: DH 204A. Corequisite: DH 201.

**DH 205 Dental Hygiene Practice V 5.00** Continues clinical activities including treatment of patients having moderate to severe periodontal disease and the provision of dental hygiene expanded functions. Activities correlate to DH 202.

**DH 206 Dental Hygiene Practice VI 5.00** Advanced dental hygiene clinical activities to include all aspects of previous training at increased skill levels. Nitrous oxide sedation included, plus simulated private practice and mock board activities.

**DH 207 Dental Hygiene Practice VII 3.00** Continues clinical activities to include treating patients with moderate/heavy deposit patients. Activities correlate to DH 206.

**DH 208 Community Oral Health I 2.00** Introduction to national and local public health issues and initiatives for delivering care to varied populations.

**DH 210 Dental Radiology Lab II 1.00** A continuation of DH 109, Dental Radiology I. Course will include provision of basic dental radiographic services to clinic patients including more advanced radiographic techniques.

**DH 228 Head and Neck Anatomy 2.00** Studies the structures and functions of oral anatomy with emphasis on those structures important in the administration of local anesthesia.

**DH 229 Local Anesthesia 2.00** Covers techniques of pain control by the administration of local anesthetics. Prepares student for management of complex clinical clients during advanced dental hygiene procedures.

**DH 230 Dental Materials 2.00** Classification, chemistry, physical properties, and uses of dental materials including manipulation techniques.

**DH 232 Nitrous Oxide Sedation 2.00** Theory and clinical application of nitrous oxide sedation for dental patients as prescribed by the State Dental Practice Acts of Oregon, Washington and California.

**DH 236 Ethics & Jurisprudence 1.00** Studies legal restrictions and ethical responsibilities associated with the practice of dental hygiene and dentistry.

**DH 246 Pharmacology 3.00** Introduces various drugs used in the practice of dentistry. Students study nomenclature, classification, dosage, and effects of different pharmacologic compounds.

**DH 250 Research Methods and Issues in Oral Health 1.00** Introduction to epidemiological studies and basic statistics in preparation to critically evaluate evidence-based research of oral health.

**DH 252 Community Oral Health II 2.00** Students utilize public health program planning models to develop and participate with community oral health programs for various populations.

**DH 253 Community Oral Health III 2.00** Development, implementation and evaluation of dental health projects in the community.

**DH 260 Periodontology I 2.00** Introduction to the science and management of periodontal diseases. Emphasizes microbial, biochemical and etiological principles. The course will correlate to clinical activities.

**COMPUTER AIDED DESIGN & DRAFTING**

**DRF 100 Drafting Orientation 3.00** Designed to acquaint students with firms that employ drafters and designers. Students observe product lines and manufacturing operations through visual media or facility tours. Students become familiar with working conditions, and may converse with employees. Covers the fundamentals of technical report writing, memos, resume development, and internet research of technical products related to drafting and design. Audit available.

**DRF 117 Drafting Fundamentals 4.00** Introduces skills needed to produce 2-D mechanical drawings, including orthographic projection, sections and pictorial drawings. Covers dimensioning basics and simple architectural plans and sections. Audit available.

**DRF 126 Introduction to AutoCAD 3.00** Introduces AutoCAD software as a design tool. Instructions will be given in the operation of both hard disk and flexible disk data storage, and plotting. Covers creation, retrieval and modification of drawings that meet industry standards using basic AutoCAD commands. Audit available.

**DRF 133 Intermediate Drafting 4.00** Reviews and incorporates material presented in DRF 117 and DRF 118. Introduces threads, fasteners, keys and springs, and their applications. Prerequisites: DRF 117, 126. Audit available.
COURSE DESCRIPTIONS

DRF 135 Advanced Drafting 4.00 Introduces working drawings, including assemblies and details, weldments, drawing numbering systems and revisions. Covers dimensional tolerancing and fits, surface finishing and welding systems. Prerequisite: DRF 133. Audit available.

DRF 136 Intermediate AutoCAD 3.00 In-depth study of computer aided drafting using AutoCAD software. Covers slide files, block attributes, user coordinate systems, V-points, 3-D entity creation, external references, and paper/model space drawing manipulation. Prerequisite: DRF 126. Audit available.

DRF 185 AutoCAD Inventor - Fundamentals 3.00 Introduces AutoCAD Inventor as a feature- rich, parametric 3D design tool for assembly-centric modeling and collaborative engineering. Develops fundamental knowledge in the areas of part and assembly modeling, using adaptive features and parts, utilizing work groups, surfacing basics, managing data, and the Engineer’s Notebook. Audit available.

DRF 237 Pro/Engineer Basics 3.00 Provides information on the Pro/Engineer Interface, command structure and solid modeling. Develops knowledge and skills in the creation and detailing of solid models. Audit available.

DRF 246 AutoCAD 3-D and Solid Modeling 3.00 Provides thorough coverage of 3-Dimensional drafting and design procedures. The concepts examined include 2D and 3D primitives, user coordinate systems, 3D V-points, complex extrusions, regions, shading and rendering, 3D solid models, and supportive AutoCAD 3D databases. Prerequisite: DRF 136. Audit available.

DRF 251 Kinematics Drafting 3.00 Introduces mechanisms that translate motion and force, including cams, gears, belts/pulleys and chains/sprockets. Introduces components such as pawls, ratchets, linkages and levers. Includes drawings of stock (shell) items and custom designs. Prerequisite: DRF 135, DRF 136 Audit available.

DRF 256 Advanced AutoCAD 3.00 Examines customization of AutoCAD menu and Lisp files. Includes buttons, POP image, screen and tablet sections, creation and implementation of user-defined AutoLISP functions, and basic file management techniques. Prerequisite: DRF 136. Audit available.

DRF 270 SolidWorks Fundamentals 3.00 Introduces SolidWorks software as a 3-D design tool. Covers creation, retrieval and modification of 3-D and layout drawings using basic SolidWorks commands. Includes skills needed to create parametric models of parts and assemblies; generate dimensioned layouts; and Bill of Materials of those parts and assemblies. Audit available.

DRF 271 SolidWorks Advanced 3.00 Covers advanced editing and modeling options, configurations of assemblies, sheet metal, and top-down assembly modeling. Prerequisite: DRF 270. Audit available.

DRF 280 Cooperative Education: Drafting Student works on approved job sites and gives complete experience as possible under job conditions. Prerequisite: Department approval required prior to registration. Audit available.

DRF 285 AutoCAD Inventor - Advanced 3.00 Covers advanced techniques used in creating and modifying parametric, assembly-centric 3D models with AutoCAD Inventor. Develops extensive knowledge in the areas of part and assembly modeling, adaptive features, utilizing work groups, surfacing, managing data and the Engineer’s Notebook. Prerequisite: DRF 185; or department permission. Audit available.

DEIESEL SERVICE TECHNOLOGY

DS 101 Diesel Engine Rebuild and Lab Procedures 12.00 Covers engine theory, engine components, and proper diesel engine rebuild procedures. Includes basic engine electrical and fuel systems, shop tool use and maintenance. Audit available.

DS 102 Truck Power Train 6.00 Introduces gear transmissions, differentials and clutches involved in the application of diesel-powered vehicles. Audit available.

DS 103 Fuel Injection Systems 6.00 Emphasizes fuel injection systems and how they relate to diesel engine performance and operation. Lecture and hands on training used for instruction. The operations of all major fuel injection devices including diesel fuels, fuel transfer pumps, fuel nozzles, fuel injectors, filtration systems, metering systems and governing systems will be presented. Audit available.

DS 104 Fundamentals of Electricity & Electronics 6.00 Covers basic electrical theory, electrical components, and proper electrical diagnostic procedures. Introduces basic electrical systems, diagnostic tool use and maintenance. Includes Cummins Electronic Engine controls and basic multiplexing. Audit available.

DS 105 Fundamentals of Hydraulics & Air Conditioning Systems 6.00 Fundamentals of hydraulics in theory and how to rig a hydraulics in the trucking and heavy equipment industry. Heavy duty air conditioning operation, trouble shooting and system repair is incorporated into this class. Audit available.

DS 106 PMI/Detroit Diesel Electronic Control 3.00 Preventive Maintenance Inspection (PMI) of vehicles, Department of Transportation (D.O.T.) out of service criteria, PM scheduling, lubricants and winterizing. Detroit Diesel Electronic Control (DDEC) learn to understand and troubleshoot system. Audit available.

DS 107 Live Equipment and Lab 6.00 Repair of customer-owned (live) equipment under a letter indicating secured internship at a participating Caterpillar Dealership. Audit available.

DS 202 Heavy Duty Power Train 6.00 Covers advanced theory and application on automatic and power shift transmissions as used in the heavy equipment industry. Audit available.

DS 203 Fuel Injection System Diagnostics & Cat Elect Eng Controls 6.00 Designed to cover diesel fuel injection pumps and their applications, timing advance mechanisms, governing systems, electronic engine controls and other related items that effect engine operation and performance. Audit available.

DS 204 Diesel Starting, Charging and Electrical Control Systems 6.00 Covers advanced automotive electrical theory, electrical components, and proper electric diagnostic and repair procedures. Includes advanced automotive electrical systems, diagnostic tool use and maintenance. Prerequisite: DS 104. Audit available.

DS 205 Mobile and Hydrostatic Hydraulics 6.00 Covers advanced hydraulics and hydrostatics used on heavy equipment, farm machinery, marine equipment, hydraulic cranes, backhoes and other equipment. Emphasizes troubleshooting. Prerequisite: DS 105. Audit available.

DS 206 Medium/Heavy Duty Truck Brake, Suspension & Steering 9.00 Gain knowledge in medium/heavy duty truck brake systems, suspension and steering. Covers: air brake systems, hydraulic brake systems, truck foundation brakes, antilock brakes, automatic slack adjusters, wheels, tires and fifth wheels. Emphasizes safety and the use of service manuals and textbooks. Audit available.

DS 280A Cooperative Education: Diesel Service Technology - On-the-job work experience related to the individual’s education and career goals. Receive one credit for 30 hours of work. Department permission required. Audit available.

DS 280B Cooperative Education: Diesel Service Technology - Seminar Share and receive feedback on experiences from other students and instructors. Discuss job survival skills. Department permission required. Audit available.

DS 9112 Small Marine Diesel Engine Preventive Maint and Tune-up 2.00 Analyze and diagnose each supporting system of the small diesel engine to properly tune the engine for maximum performance. Audit available.

DEALER SERVICE TECHNOLOGY

DST 110 Caterpillar Engine Fundamentals 8.00 This course introduces the student to Caterpillar basic diesel engine theory and service procedures. The principles of compression ignited internal combustion engines are taught and variations in design are discussed. Caterpillar engines are used for lab disassembly and assembly. Prerequisites: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. Audit available.
DST 111 Introduction to Caterpillar Service Industry 3.00 This course introduces the student to the Caterpillar Organization and provides instruction and lab experience in shop safety, shop operation, service tools, and how to obtain Caterpillar Service Information. (SIS) Prerequisites: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. Audit available.

DST 112 Caterpillar Hydraulic Fundamentals 4.00 This course is designed to teach the basic hydraulic fundamentals used in Caterpillar products, to identify and state the function of the various values used in Caterpillar hydraulic systems, to identify and state the function of vane pumps, gear pumps and piston pumps, to disassemble and assemble hydraulic components, to identify and state the function of ISO hydraulic symbols and to trace the oil flow and state the operation of various hydraulic systems. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. Audit available.

DST 113 Caterpillar Engine Fuel Systems 4.00 This course introduces the student to the various fuel systems used on Caterpillar engines. The student will become familiar with fuel selection, calibrations, nozzle testing procedures, governor operation, and hydraulic fuel ratio controls. The student will also become familiar with the 1.1 and 1.2 Mechanical Unit Injection (MUI) and Hydraulic Electronic Unit Injection (HEUI) fuel systems, the Electronic Unit Injection (EUI), Nippendonco, and Zexel fuel systems. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 110 and DST 111. Audit available.

DST 114 Fundamentals of Electrical Systems 4.00 This course introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair the complex electrical systems installed in Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 110 and DST 111. Audit available.

DST 115 Air Conditioning 3.00 This course is designed to prepare the servicemen to understand the principles of air conditioning, to identify air conditioning components, to state the component functions, and to service Caterpillar air conditioning systems. This course prepares the student to confidently work on mobile air conditioning systems in an industrial environment. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 114. Audit available.

DST 116 Fundamentals of Transmissions and Torque Converters 4.00 This course will discuss the basic components and operation of power train systems used in Caterpillar machines. Included will be basic components, clutches, torque converters, manual shift transmissions, and component functions are explained as they relate to the operation of various power train systems. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 112 and DST 114. Audit available.

DST 117 Caterpillar Machine Hydraulic Systems 4.00 This course is designed to teach the system operations and the testing and adjusting procedures for the pilot operated hydraulic system, the load sensing, pressure compensated (LSPC) hydraulic system used in Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 112 and DST 114. Audit available.

DST 150 Caterpillar Service Technology Internship 6.00 Students will work 26.5 hours per week for 8 weeks at an approved Caterpillar dealership. They will be performing service related tasks defined by the instructor, the students mentor and the students' direct supervisor. Although the students will be working in a live shop environment, the tasks assigned will primarily be related to the previous course studied. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 110 and DST 111. Audit available.

DST 200 Undercarriage and Final Drive 4.00 This course will discuss methods for transferring power through the mechanical power train and cover differential, brakes, final drives, and under carriage. The content of this course should be treated as general information for power train components in all Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. Students must have completed the sequence courses with minimum C grade, prior to internship. See advisor for proper courses. Audit available.

DST 201 Machine Electronic Systems 4.00 This course introduces the student to Caterpillar machine electronic systems and diagnostic tools needed by a technician to properly diagnose and repair the complex electrical/electronic systems installed in Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 116. Audit available.

DT 101 Dental Technology Lab I 6.00 Initial skill development in the use and operation of dental laboratory equipment, the application of safety principles, and introduction to the fabrication process of complete removable dentures. Audit available.

DT 102 Dental Technology Lab II 6.00 Continued skill development in complete denture construction. Articulators and immediate overdentures introduced. Audit available.

DT 103 Dental Technology Lab III 6.00 Advanced complete denture construction to include alternative materials, occlusal patterns and denture individualization. Audit available.

DT 120 Dental Anatomy 2.00 Studies basic forms, structures, and functions of teeth and their surrounding tissues. Audit available.

DT 141 Denture Techniques I 2.00 History and philosophy of complete removable dentures with an introduction to the construction process. Artificial tooth selection and setting procedures emphasized. Audit available.

DT 142 Denture Techniques II 2.00 Continued study of denture construction including the use of articulators, finishing procedures and alternative techniques. Audit available.

DT 143 Denture Techniques III 2.00 Advanced study of denture construction including alternative occlusal patterns and materials. Audit available.

DT 151 Science of Dental Materials I 2.00 Overview of materials used in dentistry such as gypsum products, waxes and impression materials. Audit available.

DT 152 Science of Dental Materials II 3.00 Introduces chemistry and physics, especially as they relate to dental materials. Measurement techniques and
COURSE DESCRIPTIONS

DT 204 Dental Technology Lab IV 6.00 Skill development in the processes and procedures associated with dental crown and bridge construction. Dental inlays included. Audit available.

DT 205 Dental Technology Lab V 6.00 The uses of porcelain and acrylic in crown and bridge construction with emphasis on color and form reproduction. Audit available.

DT 206 Dental Technology Lab VI 6.00 Fabrication of removable partial denture with emphasis on framework design. Orthodontic appliances included. Audit available.

DT 253 Science of Dental Materials III 2.00 Continued study of dental materials as related to cast metal alloys and crown and bridge construction. Audit available.

DT 254 Science of Dental Materials IV 2.00 Advanced study of dental materials including ceramics (porcelain) and high fusing metal alloys. Audit available.

DT 270 Inlay Casting, Crown and Bridge 3.00 Introduces crown and bridge construction processes and techniques including preparation and waxing of dies, investing, casting, and finishing. Principles also applied to dental inlays. Audit available.

DT 271 Partials, Clasp and Bar 2.00 Study of the philosophy, materials, design and fabrication processes of removable partial dentures. Audit available.

DT 272 Dental Ceramics 3.00 Study of dental ceramics (porcelain) including the philosophy, structure, properties, uses, and laboratory procedures associated with this material. Audit available.

DT 275 Dental Laboratory Management 2.00 Introduces management skills and responsibilities as well as the problems associated with dental laboratory ownership. Audit available.

DT 276 Dental Laboratory Management Lab 1.00 Computer-based exercises in techniques required for small business management. Audit available.

DT 284 Dental Specialties 2.00 Introduces dental specialties and advanced techniques that involve participation and skill of the dental lab technician. Audit available.

DT 285 Dental Seminar and Practicum 2.00 A workplace preparation course including professional ethics, organizations and opportunities, certification requirements and an overview of the dental care delivery system in Oregon. Also introduces new products and procedures and have an opportunity to visit local laboratories. Audit available.

DT 9406 Dental Technology Practicum Covers all steps and procedures in the construction of dental replacements which may include cast metal crowns and bridges, the use of dental ceramics, and/or partial and full dentures. Audit available.

ECONOMICS

EC 200 Introduction to Economics 4.00 A survey course covering: basic microeconomic and macroeconomic concepts, the history of economic ideas, and a variety of economic issues. Depending on the instructor’s interest, the issues covered might include: price ceilings, price floors, pollution, income distribution, poverty, international trade issues, inflation, unemployment, economic growth, public finance, and transitional economies. This course is recommended for students who desire a one term survey course. Recommended: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

EC 201 Principles of Economics: Microeconomics 4.00 A study of the market system, involving the essentials of demand and supply analysis; competition and monopoly; labor markets; public policy towards business; distribution of income; international trade and commercial policy; comparative advantage, tariffs, and quotas. EC201 and EC202 together constitute the two term transfer sequence. Recommended: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

EC 202 Principles of Economics: Macroeconomics 4.00 A study of factors affecting the level of national income; the essentials of money and banking; the role of government expenditure and taxation in achieving economic stability, growth, and development; international monetary issues including exchange rates and the balance of payments. Recommended: MTH 95 and EC 201. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

EC 203 Principles of Economics: Applications to Economic Issues 4.00 An economic issues course that covers specific topics in some depth. Topics covered depend on current events and instructor interest and may include: International trade and finance; energy and resource economics; poverty, discrimination, and income distribution in national economies and the global economy; economic development; financial market instability; environmental and sustainability issues; government and central bank policies and competing ideologies; other current or relevant topics. Prerequisites: WR 115, RD 115, and MTH 95 or equivalent placement test scores, and EC 200 or EC 201 or EC 202. Audit available.

EC 216 Labor Markets: Economics of Gender, Race, and Work 4.00 The study of labor markets with emphasis on the economic status of women and their decisions about work and family. Topics of study include: recent developments in the labor market; the gender pay gap and women-men occupational differences; labor supply decisions; human capital theory; racial discrimination; economics of marriage and household decisions. Recommended: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

EC 230 Contemporary World Economic Issues: International Economics 3.00 Selected issues and problems related to international economics and international economic institutions. Includes trade and the balance of payments, trade competition between Japan and the U.S., reform and restructure of the Russian and Eastern European economics, economic development and problems of developing nations. Audit available.

EC 285 Introduction to Political Economy 4.00 Examines the United States economy from a systems/institutional perspective. With this approach, students will explore the key institutions that make up the U.S. economy including corporations, government, the market system, labor unions, monetary and financial institutions, and others. Students will also examine three problem areas: environmental degradation and resource depletion; social and political inequality; and economic instability. Also introduces possible solutions based on institutional change and development. Students will deepen their understanding of capitalism in America, as well as gain insights into developing viable economic alternatives based on principles of environmental sustainability, equity and economic stability. Recommended: MTH 95 and WR 115. Audit available.

EARLY EDUCATION & FAMILY STUDIES

ECE 120 Introduction to Early Education and Family Studies 3.00 Introductory level child development class integrating the normal growth and developmental patterns of children from conception through age 10 with developmentally appropriate practices. Linkages between development and practice in a variety of settings are covered with particular emphasis on parent (family) – teacher (caregiver) partnerships. Audit available.

ECE 121 Observation and Guidance I 3.00 Focuses on age-appropriate guidance and observations techniques for individual children six week to six years. Topics include the ongoing dynamics of relationships, how values and belief systems impact guidance decisions, and the linkages between observation and guidance plans for individual children. Audit available.

ECE 122 Environments and Curriculum in Early Care and Ed I 4.00 An introduction to an overview of creating physical and social environments and curriculum for children six weeks to six years in home or center-based programs. Course covers theories and relationships between physical and social space, activities, experiences, and materials. Students are introduced to the use of developmentally and culturally appropriate practices in planning, selecting, and evaluating environments and curriculum for young children. Audit available.
ECE 123 Environments and Curriculum in Early Care and Ed II 4.00 This course explores the use of developmentally and culturally appropriate practices in creating physical and social environments and curriculum for children six weeks to six years in home or center-based programs. Theories of play and early care and education are employed to plan and implement environments and curriculum for children. Students plan, implement, and evaluate environments and curriculum for young children. Prerequisite: ECE 122. Audit available.

ECE 124 Multicultural Practices: Exploring Our Views 3.00 Develops awareness of how personal experiences, belief systems, and values impact work with children and families. Examines the impact of cultural, linguistic, and class identities and histories on inter-relationships in diverse populations. Applies techniques for incorporating other peoples histories, values and belief systems into child-and-family-centered practices. Audit available.

ECE 130 Practicum Seminar 2.00 Reviews lab experiences and observations. Focuses on the role of the teacher in carrying out a developmental philosophy of early childhood education. Audit available.

ECE 131 Practicum I-Experienced Teachers (Infant/Toddler and Presch) 3.00 Course to improve and strengthen achievement of competencies in working with young children in a group setting at their work sites. Includes using developmentally appropriate methods in recognizing and providing a safe and sanitary environment; using positive guidance techniques; supporting language development and planning a schedule and curriculum. Department permission required based on work experience and course work. Corequisite: ECE 130 Audit available.

ECE 134 Practicum II 3.00 Develops skills in supervision of children in a group setting in the PCC Child Care Center. Includes using developmentally appropriate methods in recognizing and providing a safe and sanitary environment; using positive guidance techniques; supporting language development; supporting and planning a schedule and curriculum. Prerequisites: ECE 133 and ECE 122. Audit available.

ECE 173 Children and Loss: The Effects of Death and Divorce 1.00 Divorce and death in families can have a profound effect on young children. Development can be impacted across domains. This course examines the effects of loss on children and common developmental outcomes. Strategies and resources for supporting children and families through difficult periods involving separation or the death of a loved one are explored. Audit available.

ECE 174 Head Start Past and Present 1.00 Head Start (including Migrant and Tribal Head Start) has served and empowered families and children from low-income environments for over 30 years. Today, Head Start is one of the largest child care-related employers in the country. This course examines the history, current status, and future of Head Start. An ideal course for students interested in future employment with the agency. Audit available.

ECE 175A Infant/Toddler Caregiving: Learning and Development 1.00 Covers growth and development: physical, cognitive, and language; ages of infancy and facilitating learning. Audit available.

ECE 175B Infant/Toddler Caregiving: Group Care 1.00 Covers group care including: routines, quality, staff relations, environments and welcoming children and families into care. Audit available.

ECE 175C Infant/Toddler Caregiving: Social/Emotional Growth 1.00 Covers social-emotional growth and socialization including: development, temperament, responsible care, guidance and discipline, and supporting the needs of infants and toddlers. Audit available.

ECE 175D Infant/Toddler Caregiving: Learning and Development 1.00 Covers growth and development: physical, cognitive, and language; ages of infancy and facilitating learning. Audit available.

ECE 177 Tiny to Tall: Making Mixed Age Groupings Work 1.00 Mixed-age early childhood settings can include children from infancy through elementary school age. This course explores the benefits and addresses the challenges of creating quality environments and programming for children of mixed ages. Audit available.

ECE 179 The Power of Portfolios in Early Education 1.00 Portfolios for children in early care and education programs are a powerful way to demonstrate children’s skills, learning, development, and culture. Creating meaningful portfolios with children and families includes an observation plan, an organization system, and accessible technology (digital photography, scanners, etc.). Audit available.

ECE 180 Early Childhood Professional English A 3.00 ECP English A, the first term of a three-term sequence, introduces the academic English used in the fields of early childhood development and education. This course is intended for non-native speakers of English who are working toward an AAS degree in Early Education and Family Studies. Audit available.

ECE 181 Early Childhood Professional English B 3.00 ECP English B, the second term of a three-term sequence, continues an introduction to the academic English used in the fields of early childhood development and education. This course is intended for non-native speakers of English who are working toward an AAS degree in Early Education and Family Studies. Audit available.

ECE 182 Early Childhood Professional English C 3.00 ECP English C, the third term of a three-term sequence, continues an introduction to the academic English used in the fields of early childhood development and education. This course is intended for non-native speakers of English who are working toward an AAS degree in Early Education and Family Studies. Audit available.

ECE 184 Children’s Puppetry & Theater 1.00 Puppetry and theater can be a powerful tool in early childhood environments. Puppetry and theater capitalize on children’s creativity and imagination. It fosters development across domains and is particularly effective in helping children work through issues, conflicts and important transitions in their lives. This course explores the many benefits of puppetry and theater for young children. Audit available.

ECE 185 Planning Fun and Meaningful Field Trips for Young Children 1.00 Field trips are worth the hassle! Field trips build on child interests and contribute to children’s developing knowledge of the world. This course explores the positive benefits of field trips in early childhood programs. Students will explore field trip possibilities in the Portland area, develop field trip protocols, and problem-solve common field trip issues. Audit available.

ECE 186 Nature and Gardening with Young Children 1.00 Children are inherently engaged by nature and gardening experiences. Bringing gardening and experiences in nature to your work with children will help you facilitate children’s development across domains in an engaging and ever-changing context. This course explores the many benefits of gardening and natural experiences for young children. Audit available.

ECE 187 Cooking with Kids 1.00 Cooking with kids can do it all! Cooking can help young children learn language and literacy, math, science, cooperation, and healthy eating habits. Learn to create and share cooking
experiences with young children in a way that maximizes child participation and developmental opportunities and minimizes the potential for chaos. Audit available.

ECE 188 Block Play and Woodworking for Young Children 1.00 When children are exposed to well-planned block play and wood working experiences they create, they build, they construct, and they stay engaged. Bringing block play and wood working to your program will help you facilitate children’s development across domains in an engaging context. This course explores the many benefits of block play and wood working experiences for young children. Audit available.

ECE 189 Building Relationships with Infants, Toddlers, and Families 1.00 Strong relationships are vital to healthy development for infants and toddlers. The role of infant and toddler caregivers is to facilitate, support, and sustain individualized relationships with the families and children in their programs. This course will explore ways in which caregivers can facilitate and sustain these extremely important relationships. Audit available.

ECE 190 Building Relationships with Infants 1.00 Interest-based planning is a key aspect of quality curriculum development in early childhood. Identifying infant interests requires perceptive and responsive adult attention and creative effort. This course will explore the ways in which infants communicate their interests to adults, methods of assessing infant interests, and interest-based curriculum development in infant-care programs. Audit available.

ECE 191 Interest-Based Planning for Infants 1.00 Interest-based planning is a key aspect of quality curriculum development in early childhood. Identifying infant interests requires perceptive and responsive adult attention and creative effort. This course will explore the ways in which infants communicate their interests to adults, methods of assessing infant interests, and interest-based curriculum development in infant-care programs. Audit available.

ECE 192 Advocacy in the Field of Early Education and Family Studies 1.00 Issues in early education and family studies (affordability, funding, quality, compensation, accessibility, and so forth) provoke impassioned responses and a desire to effect change. This course explores the role of advocacy in the field of early education and family studies. In contributing to real-life (self-selected) advocacy efforts students will learn effective advocacy techniques, plan an advocacy project, and review lobbying and legislative processes. Audit available.

ECE 193 Surviving and Thriving: Managing Stress in Early Education 1.00 This course examines common sources of stress and burnout in early education and family studies. Strategies for surviving, thriving, and caring for the self are explored. Audit available.

ECE 194 Career Exploration in Early Education and Family Studies 1.00 Early Education and Family Studies is a broad field encompassing many forms of services for children and families. This course is designed for students who are considering a career in the field. In conjunction with service learning placements in the Portland area, students will explore the boundaries of the field, career options and requirements, and opportunities for life-long learning and advancement. Audit available.

ECE 195 Building Effective Outdoor Environments 1.00 Outdoor spaces are an integral part of quality early childhood environments. Outdoor experiences foster children’s exploration and positive self-esteem as well as large and small motor development. This course will examine outdoor environments for children of all ages and abilities. Students will plan, implement, and evaluate outdoor environments and activities. Audit available.

ECE 196 The Professional in Early Education and Family Studies 3.00 History, current programs and practices, and future issues of early childhood education. Includes professionalism, historic and current issues, types of programs for young children, parent interaction, job opportunities, ethical/legal issues and community resources. Develops a professional philosophy. Prerequisite: WR 115 Audit available.

ECE 200 Observation and Guidance II 3.00 Examines techniques for observing and recording behavior and keeping records as used in the care and education of infants through five-year-olds. Focuses on observation and guidance techniques for groups of children in addressing challenging behaviors and issues in early childhood environments. Covers the caregiver’s role in using observation to promote development, including self-development. Prerequisites: WR 115 and ECE 121. Audit available.

ECE 221 Advocacy and the Community 3.00 Examines techniques for observing and recording behavior and keeping records as used in the care and education of infants through five-year-olds. Focuses on observation and guidance techniques for groups of children in addressing challenging behaviors and issues in early childhood environments. Covers the caregiver’s role in using observation to promote development, including self-development. Prerequisites: WR 115 and ECE 121. Audit available.

ECE 222 Multicultural Practice: Curriculum & Implementation 3.00 Develops awareness of cultural and ethnic issues as they relate to the early childhood classroom teacher. Focuses on ethnocentrism, racism and discrimination. Includes techniques for developing multi-cultural, anti-bias curriculum. Prerequisite: ECE 124. Audit available.


ECE 234 Music and Movement in Early Childhood Education 3.00 Overview of the development of musical and motor skills in children from birth to age 6. Learn and develop a variety of music and movement activities, techniques and materials appropriate for them. Audit available.

ECE 235 Language and Literacy in Early Childhood Education 3.00 Overview of language and literacy development in children from infancy to age 6. Design and use a variety of language and literacy development activities with young children. Audit available.

ECE 236 Administration of Early Childhood Programs 3.00 Studies various tasks and responsibilities of program administration. Topics include licensing, program planning, organization, financial management, parent and community relationships, and personnel management. Prior ECE course work and experience working with children in groups is highly recommended. Audit available.

ECE 241 Exploring the CDA 1.00 Introduces the national Child Development Associate (CDA) credential for professionals in early childhood care and education. Includes a description of the process of applying, developing competencies, and completing requirements for the CDA. Audit available.

ECE 260 Advanced Practicum - Seminar 3.00 Refine skills necessary for supporting the total development of children, ages 6 weeks to 6 years, in a group setting and to integrate child development theory and practice in two interdependent components: seminar and field work experience. Department permission required. Prerequisite: Certificate level courses plus WR 121, HEC 226, ECE 221, and ECE 224. Corequisite: ECE 263 or 264 Audit available.

ECE 264 Advanced Practicum (Lab) 4.00 Refine skills necessary for supporting the total development of children, ages 6 weeks to 6 years, in a group setting and to integrate child development theory and practice in two interdependent components: seminar and field work experience. Department permission required. Corequisite: ECE 260. Audit available.

ED 100 Introduction to Education for Paraeducators 3.00 Explores the roles of a variety of personnel in schools. Includes personal responses to school situations, students, other personnel and the roles of schools in American Society. Examines ethical, legal, and administrative implications for educators. Recommended as an initial course for those contemplating a career in education. Course is designed to ease the transition of students to college-level study. Audit available.

ED 102 Displays & Graphics for Educators 3.00 Presented as a means of visual communication that develops an understanding and usage of the Internet, digital camera, scanner, and word processing for graphics. Introduces dry mounting, laminating, enlarging, copying, poster making, award making and bulletin board creating. Provides opportunities to empower the prospective librarians/teachers with the ability to promote content in different modalities. Prerequisite: CAS 133 or ED 136. Audit available.

ED 103 Desktop Publishing for Educators 3.00 Introduces desk-top publishing. Produces materials to be used in an educational setting using flat-bed scanners, graphics sources, layout guidelines and design rules. Prerequisites: ED 136. Audit available.

ED 104 Multimedia for Educators 3.00 Develops and evaluates multimedia presentations for use in schools and libraries. Multimedia presentation guidelines will be used in planning and developing...
ED 109 Library Procedures 3.00 Introduces structure, functions, and procedures in libraries. Provides a base on which to build specific skills needed for employment in libraries. Covers knowledge and use of the Dewey Decimal System, electronic card catalog/ circulation systems, procedures for processing, and maintaining collections, basic terminology and policies. Prerequisite: Placement test scores qualifying student to enroll in WR 121. Audit available.

ED 111 Selection of Library Materials 3.00 Provides an introduction to the selection and evaluation of library materials. Covers library standards, selection policies, verification tools, censorship and copyright laws. Audit available.

ED 112 Introduction to Children's Literature 3.00 Introduces children's literature, authors and illustrators. Covers current and classic works, book awards, artistic and literary elements, introduction to genres, basic book discussion techniques, and audio-visual and electronic formats. Prerequisite: WR 115. Audit available.

ED 114 Reference Materials 3.00 Introduces reference materials and sources as well as reference procedures in the library. Overview and evaluation of standard reference sources in print format as well as electronic format is central. Learn to design search strategies for efficient location of information and to conduct effective reference interviews. Prerequisite: Placement test scores qualifying student to enroll in WR 121. Audit available.

ED 115 Storytelling 2.00 Provides introduction into how to do storytelling. Different storytelling techniques will be demonstrated and practiced in the course. Audit available.

ED 116 Literature for Adolescence and Young Adults 3.00 Covers contemporary literature being read by young people of high school age, literature-related audio-visuals, and various specialized reading lists and bibliographies. Includes controversial areas in young adult literature. Audit available.

ED 123 Instructional Strategies: Reading 3.00 Introduces components of the reading process and techniques for teaching reading to kindergarten through grade 8 students. Includes assessment and methods for teaching students with special needs. Prerequisites: WR 115 and RD 115. Audit available.

ED 124 Instructional Strategies: Mathematics/Science 3.00 Presents strategies for teaching, reinforcing, and assessing basic math concepts by moving in a continuum from concrete to abstract. Emphasizes using manipulatives to introduce concepts in addition, subtraction, division, fractions, and place value. Covers the use of writing to reinforce and assess math concepts and integration of math concepts into science curriculum. Prerequisites: MTH 60 or higher; placement into WR 121. Audit available.

ED 131 Applied Learning Theory 3.00 Prepares teachers and instructional assistants to work in a standards-based setting. Offers strategies to plan and implement instruction, assess student progress and instructional effectiveness, and re-teach as needed. Focuses on learning and motivational theories that apply to instructional situations. Includes creating and studying activities for specific learning problems. Prerequisites: WR 115 and RD 115. Audit available.

ED 136 Computers in Education 3.00 Introduces students to the many educational uses of computers and how to integrate educational technology into the curriculum. Prerequisites: Completion of WR 115; RD 115; and CAS 133. Audit available.

ED 161 Leadership Through Advocacy and Representation 1.00 Provides students serving on college or community decision-making bodies with the opportunity to develop leadership skills gained by representing and advocating for a constituency. Students will process the skills learning by serving on committees that are associated with communication techniques, problem solving, interpersonal skills, research, and team work. Instructor permission required. Audit available.

ED 162 Leadership Through Civic Engagement 2.00 Provides students with the opportunity to hone their leadership skills by participating in activities associated with civic engagement through community service projects and volunteer roles. Students will develop leadership skills by working on meaningful projects that cultivate team work, communication techniques, group dynamics, project management, organization and evaluation. Instructor permission required. Audit available.

ED 163 Personal Leadership Development 3.00 Provides an overview of leadership theory, styles and skills Student leaders will be provided with the opportunity to develop skills through skill-building exercises, professional networking techniques, group process and teamwork methods, basic communication techniques, prioritizing, goal setting and other basic information necessary for those anticipating leadership roles. Instructor permission required. Audit available.

ED 171 Computers in Education II 3.00 Provides introduction to all aspects of the Internet and email. Use internet browser. Recommended: Basic computer knowledge. Audit available.

ED 206 Seminar: Advanced Education Techniques 3.00 Provides time and direction for investigating current issues in education. Audit available.

ED 208 Outdoor School Leadership Practicum 2.00 Gain training and experience teaching and leading sixth graders at outdoor school. Requires attending at least one full day training session (10-12 hours) at the outdoor school site prior to the scheduled assignment to work for 1 week, approximately 16 hours per day, 4 days, at a residential outdoor school for 6th graders.

ED 209 Practicum 3.00 Spend nine hours per week in a supervised field experience after an orientation. Audit available.

ED 210 Practicum 3.00 Spend nine hours per week in a supervised field experience after an orientation. Audit available.

ED 211 Practicum 3.00 Spend nine hours per week in a supervised field experience after an orientation. Audit available.

ED 214 Practicum: Outdoor School 3.00 Gain training and experience teaching and counseling sixth graders in an outdoor setting. Requires attending two evening training sessions; spending one week at an outdoor camp; keeping a journal and submitting a summation paper to the PCC coordinator. Audit available.

ED 216 Practicum: Seminar 1.00 Discuss practicum experiences, problems and successes. Concurrent enrollment in a practicum is required. Audit available.

ED 217 Classroom Management 3.00 Introduces several approaches to proactive classroom management. Strategies for setting up an appropriate room environment and establishing procedures, systems, and rules will be introduced and practiced. Behavior management will also be introduced and practiced. Prerequisites: WR 115 and RD 115. Audit available.

ED 218 Working with Paraeducators 3.00 Assists classroom teachers in developing effective methods to work effectively with paraeducators in their classrooms. Methods of assigning responsibilities, training, monitoring and supporting performance, and providing feedback will be explored along with communication and problem solving techniques. Prerequisites: RD 115, WR 115. Audit available.

ED 224 Foundations of Education 3.00 Provides an overview of the history and current issues in the field for K-12 education including the impact of philosophy on practice. Prerequisites: RD 115 and WR 115. Audit available.

ED 251 Overview of Exceptional Learners 3.00 Introduction to diverse conditions of students with special needs in public schools. Identifies and defines the following disabilities: learning disabilities, emotional and behavior disorders, mental retardation, severe and multiple disabilities, autism, health impairments, physical disabilities, communication disorders, vision impairments, hearing loss, and traumatic brain injury. Audit available.

ED 252 Behavior Management 3.00 Behavior terminology will be defined and applied. Students will demonstrate and practice baseline setting up a program, reinforcing, modeling, shaping, chaining,
monitoring and graphing data. Audit available.

**ED 258 Multicultural Education: Principles 3.00** Introduces philosophy, activities, and materials applied in developing a culturally sensitive multicultural classroom and curriculum. Achieves an understanding of multicultural education and its impact on teaching in the classroom. Prerequisites: RD 115 and WR 115. Audit available.

**ED 259 Multicultural Education: Applications 3.00** Provides an in depth view into multicultural educational issues in the K-12 setting today. Gain skills to develop cultural appropriate pedagogy, materials and curriculum in order to serve the needs of an increasingly diverse US educational system. Prerequisite: WR 115, RD 115. Audit available.

**ED 260 Multicultural Literature for Children and Young Adults 3.00** Introduces multicultural literature for early childhood through young adult. Emphasizes contemporary literature representing a range of cultures in the U.S. as well as world-wide. Covers selection and evaluation, cultural considerations, and book awards. Prerequisites: Placement test scores qualifying student to enroll into WR 121. Audit available.

**ED 263 Portfolio Development 2.00** This is a capstone course for the Paraeducator and Library/ Media Certificate programs. Students will prepare professional portfolios that demonstrate the competencies they have developed during the program. It may also be taken by others in the field of education who wish to create professional portfolios. Prerequisite: WR 115, RD 115 and MTH 60 or equivalent placement test scores. Audit available.

**ED 264 Portfolio Development II: AAS Paraeducator Addition 1.00** Covers how to prepare a professional portfolio that documents the outcomes and requirements for the AAS degree in Paraeducation. Prerequisite/concurrent: ED 263.

**ED 268 Introduction to Developmental Disabilities 3.00** Provides background information on teaching techniques, expected achievement levels, intellectual functioning, goals and objectives for working with students with developmental disabilities. Emphasizes physical and mental development from birth and familiarity with the known causes, classifications and terminology used in the field of special education. Audit available.

**ED 269 Introduction to Teaching the Learning Disabled Student 3.00** Defines terms associated with learning disabilities and behavior disorders. Includes diagnostic procedures, remedial programs and teaching techniques. Audit available.

**ED 270 Practicum I 3.00** Spend a minimum of 100 hours in a supervised field experience. Participate in group debriefing sessions as arranged by PCC supervisor. Prerequisite: Permission of Department/Instructor. Audit available.

**ED 271 Practicum II 3.00** Spend a minimum of 100 hours in a supervised field experience. Participate in group debriefing sessions as arranged by PCC supervisor. Prerequisite: Permission of Department/Instructor. Audit available.

**ED 272 Practicum III 3.00** Spend a minimum of 100 hours in a supervised field experience. Participate in group debriefing sessions as arranged by PCC supervisor. Prerequisites: Permission or Department/Instructor. Audit available.

**ED 281 Philosophy and Techniques of Teaching at a Community College 3.00** Develops the capacity to effectively use and manage instructional resources in achieving the learning objectives of vocational programs. Audit available.

**ED 290 Sheltered Instruction for English Language Learners 3.00** Introduces sheltered instruction strategies that will modify content for English Language Learners in the K-12 classroom. Provides opportunities to explore curriculum development and the needs of the learner. Examines the impact of immigrant culture on the ELL experience. Prerequisite: RD 115 and WR 115. Audit available.

**ED 291 Bilingual and ESL Strategies 3.00** In depth approach to analyzing best practices and teaching strategies for assisting English language learners in the K-12 setting. Enhances students’ ability to assess, design and provide appropriate instruction and communication for and to ELLs. Explores relevant linguistic and cultural theories and issues, and offers students a chance to connect theory to practice. Prerequisite: WR 115, RD 115. Audit available.

**ED 298A Special Projects in Education 1.00** Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

**ED 298B Special Projects in Education 2.00** Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

**ED 298C Special Projects in Education 3.00** Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

**ED 298D Special Projects in Education 4.00** Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

**ED 298E Special Projects in Education 5.00** Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

**EET 101 Introduction to Electronic Testing Equipment/Soldering/Tools 1.00** Introduces the operation and use of various types of equipment and tools used in electronic technology including: oscilloscope, function generator, DMM, and voltage source, calculator, and EXCEL. Uses software controls to obtain and analyze data available on this equipment, and Spice to perform simulation. Prerequisite: WR 121; Prerequisite/concurrent MTH 111. Audit available.

**EET 110 Introduction to Renewable Energy 3.00** Introduces sustainability and renewable energy (RE) sources and technologies including PV and solar thermal, geothermal, biomass, biodiesel, fuel cell, wind, hydro, ocean wave, photovoltaic, etc. Covers RE environmental issues, demand and distribution management, and green and RE career opportunities, etc. Prerequisites: WR 121; prerequisite/concurrent MTH 111; or department approval. Audit available.

**EET 111 Electrical Circuit Analysis I 5.00** Covers International System of Units, engineering notation and prefixes, definitions of current, voltage, resistance, power, work and efficiency. Includes DC circuits: Ohm’s and Kirchhoff’s Laws; DC resistive networks, Thevenin and Norton equivalent circuits, node voltage and mesh current analysis methods; Includes a 3-hour per week laboratory session. Prerequisite/concurrent: MTH 111. Prerequisite/concurrent: EET 101 or department approval. Audit available.

**EET 112 Electrical Circuit Analysis II 5.00** Covers Capacitance; Inductance; RC/RL transient response; sinusoidal waveforms; reactance and impedance; AC power, Phasor analysis of RLC circuits; node voltage and mesh current analysis; superposition, Thevenin’s and Norton’s network theorems. Includes a 3-hour per week laboratory. Prerequisite: EET 111. Prerequisite/concurrent: MTH 112. Audit available.

**EET 113 Electrical Power 5.00** Covers ac power, series and parallel resonant circuits, Q and selectivity, RL and RC filters, decibels, transfer functions and Bode diagrams, transformers, three phase power distribution, introduction to motors/generators/motor control, Fourier series and transform applied to circuit analysis. Prerequisite: EET 112. Audit available.

**EET 121 Digital Systems I 3.00** Covers basic electrical concepts, number systems, combinational gates (AND, OR, NOT, NAND, NOR, and XOR), electrical characteristics and internal structures of TTL electronics.
COURSE DESCRIPTIONS

EET 122 Digital Systems II 4.00 Second course in digital electronics presents sequential circuit elements (latches and D/JK flip-flops) with applications including counters, registers, and shift registers. Sequential network analysis and synthesis are covered including the use of state tables and state diagrams. Introduces sampling and the Nyquist Sampling Theorem including introductory coverage of analog-to-digital converters (ADC) and digital-to-analog converters (DAC). Includes a 3-hour per week laboratory. Prerequisite/concurrent: MTH 111. Prerequisite/concurrent: EET 101 or department approval. Audit available.

EET 123 Digital Systems III 4.00 Third course in digital electronics continues prior coverage of digital-to-analog converters (DACs) and analog-to-digital converters (ADCs) with additional conversion topologies, a more detailed analysis of the Nyquist sampling theorem, additional coverage of programmable logic devices (PLDs), and the implementation of sequential state machines. Includes a 3-hour per week laboratory. Prerequisite: EET 122 Audit available.

EET 178 PC Architecture for Technicians 4.00 Covers the architecture, assembly, and disassembly of IBM PC compatible computers. Includes basic operational concepts and identification, removal/installation, and configuration of motherboard components, memory, power supplies, disk drives, video adapter boards, I/O boards and modems. Servicing hardware, software, and documentation will be reviewed. Includes a 3-hour per week laboratory. Prerequisite: EET 111 Audit available.

EET 188 Industrial Safety 1.00 Safety practices in the electronics industry. Covers: electrical safety, HAZMAT, flammable and combustible liquids, safe handling of electronic components in the manufacturing environment including ESD control, product testing/certification, bloodborne pathogens, fire safety, laser and radiation safety. Prerequisites: EET 111. Audit available.

EET 221 Semiconductor Devices and Circuits 5.00 Introduction to semiconductor devices. Characteristics and biasing of diodes and transistors. Design and analysis of circuits using diodes, bipolar transistors, and field effect transistors. Application of transistors as amplifiers and switches. A 3-hour per week laboratory includes the application of computer tools in circuit design, evaluation, and analysis. Prerequisite: EET 113, MTH 112. Audit available.

EET 222 Operational Amplifier Circuits 5.00 Characteristics and applications of operational amplifiers (op-amps). Design and analysis of op-amp amplifiers, comparators, voltage and current regulators, summers, integrators, and differentiators. Frequency response of op-amp circuits. Applications of the op-amp in power supplies and control systems. A 3-hour per week laboratory includes project design, evaluation, and documentation. Use of computer tools. Prerequisites: EET 221 Audit available.

EET 223 RF Communications Circuits 5.00 Transistor and diode AC models and equivalent circuits. Design and analysis of multistage amplifiers and RF communications systems. Frequency response and Bode plots. A 3-hour per week laboratory includes measuring and analyzing the performance of transistor circuits in RF communications systems. Prerequisite: EET 221 Audit available.

EET 241 Programming for Electronics 4.00 Introduces programming for electronics applications with emphasis on instrumentation control, robotics and automation. Includes writing programs, as well as troubleshooting and modifying existing code in assembly, C and/or specialized high-level computer languages, such as LabVIEW. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores; and EET 123 and CS 133U or CS 161. Recommended: EET 178. Audit available.

EET 242 Microcontroller Systems 4.00 Introduces the student to popular 8051 microcontroller. Topics include the hardware, software, and interfacing of the Intel 8051 microcontroller. The emphasis is on interfacing the 8051 to real-world devices such as switches, displays, motors, and A/D converters, through assembly language and possibly C language programming. Robotics projects included. Prerequisite: CS 133U; and EET 122. Audit available.

EET 245 Industrial Control Systems 4.00 Introduces electronic feedback control systems using analog and digital methods. Topics include temperature control, motor speed control, and servo systems. Lab exercises will include the interfacing and programming of a microcontroller IC. Prerequisite: EET 241 or EET 242. Prerequisite or concurrent: EET 222. Audit available.

EET 254 Electronic Engineering Technology Seminar 1.00 Topics covered include information on finding employment in the electronics industry, writing resumes and cover letters, and practice interviewing. Prerequisite: EET 113. Audit available.

EET 255 Industrial Control Systems 4.00 Introduces electronic feedback control systems using analog and digital methods. Topics include temperature control, motor speed control, and servo systems. Lab exercises will include the interfacing and programming of a microcontroller IC. Prerequisite: EET 241 or EET 242. Prerequisite or concurrent: EET 222. Audit available.

EET 256 Capstone Project 2.00 Students learn how to work as teams on instructor approved projects. Students can choose projects in electronics, renewable energy systems, wireless/data communications and automation/robotics. Typical project activities include the research and design phase, the execution phase, and the project report phase. A written report and oral presentation is required. Prerequisite: EET 241 or EET 242; and EET 222 Audit available.

EET 260 Biomedical Equipment 4.00 Introduction to the fundamentals of medical instrumentation, bioelectric signals and electrodes, recording systems, biomedical recorders, patient monitoring systems, arrhythmia and ambulatory monitoring instruments, fetal monitoring instruments, biomedical telemetry and telemedicine, oximeters, blood flowmeter, cardiac output measurement, pulmonary function analyzers, laboratory equipment, audiometers, and patient safety. Prerequisites: MP 111, BI 122 or BI 233, EET 113, EET 123 or instructor permission. Prerequisite/concurrent: EET 221. Audit available.

EET 261 Biomedical Equipment II 4.00 Introduction to modern imaging systems, pacemakers, defibrillators, surgical equipment, lasers, physiotherapy and electrotherapy equipment, hemodialysis machines, lithotriptors, anesthesia machines, ventilators, radiotherapy equipment and automated drug delivery systems. Prerequisites: EET 260. Audit available.

EET 269 Wind Mechanics 3.00 Introduces mechanical systems that make up subsystems of today's wind turbine. Basic hydraulics and pneumatics, wind power production as well as other wind power related topics will be covered. Prerequisite: Placement into WR 115. Prerequisite/concurrent: EET 113. Audit available.

EET 271 Robotics 4.00 Introduces foundational concepts in building and programming robots. Programming microcontrollers and configurations of electronic components to enable robotic activity. Projects with operation/maintenance/troubleshooting/repair of industrial robots or using robotics training modules will also be employed. Prerequisites/Concurrent: EET 255, EET 242. Audit available.

EET 272 Motors and Generators 3.00 Covers operating principles and characteristics of AC and DC motors and generators. Single-phase, split-phase, and three phase AC motors. Synchronous and asynchronous generators. Control devices and control circuits, ladder diagrams and PLC's. Prerequisite: EET 221. Audit available.

EET 273 Electronic Control Systems 3.00 Covers electronic control systems, open-loop and closed-loop, proportional, integral, derivative, PI, and PID control modes, power control devices, relays, transistors, thyristors, and sensors. Topics include temperature control, DC motor control, and stepper motor control. Lab exercises include temperature control and motor control circuits. Prerequisite: EET 222. Audit available.

EET 280A Cooperative Education: Electronics Engineering Technology For students employed in an approved cooperative education position within a local electronics industry. Experiences are closely aligned with the student's on-campus educational program. Department permission required.

EET 280C Cooperative Education: BMET Practicum Provides clinical education experience in a biomedical department with a hospital, clinic or other medical facility, a medical equipment repair/manufacturing company, or a laboratory. Variable credit: 30 hours of work experience equals one credit.
ELT 110 Electricity for Non-Electricians 2.00  Practical, hands-on application of electrical principles, practices and codes to help non-electricians learn the basics of wiring that they encounter around the house. Safety practices will be emphasized as well as basic electrical theory. After the first three class sections, there will be minimal theory or lecture and maximum practice using tools and materials that the homeowner will encounter in doing electrical work on his/her home. Audit available.

ELT 120 OSHA 10 Hour Safety Training 1.00  Introduces OSHAs General Duty Clause 5(a) (1) General Safety and Health Provisions, Competent Person, Qualified Person, Health Hazards in Construction, Electrical, Fall Protection, Stairways and Ladders, Scaffolding, Motor Vehicles, Hand & Power Tools, and Excavations. Awards a 10-hour Construction Outreach Completion Card from OSHA. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 125 Basic Programmable Controllers 2.00  Develops the student’s understanding of the complete operation of a variety of programmable controllers. The applications, operations, and programming of PLC’s are the areas of study with the main emphasis on programming (computers will be used as programmers). This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 110 or TE 9102. Audit available.

ELT 126 Intermediate Programmable Controllers (PC Based) 2.00  Presents advanced features of programmable controllers, including designing, monitoring, and editing programs with practical hands-on experience. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 125 or TE 9126. Audit available.

ELT 150 Fiber optics I 4.00  Origins of Fiber Optics and Fiber Optic solutions for communications. Introduction to design and plant cabling, cable preparation, pulling techniques, termination, splices, and cable testing. Includes cable and closure preparation, fiber cleaving and splicing. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 151 Fiber optics II 4.00  Develops skills in fiber optics connections and testing. Connector assembly and polishing techniques, system losses and testing. Fault location, repair and restoration are included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 150 or TE 9101. Audit available.

ELT 152 Fiber optics: Inside/Outside Plant 4.00  Application for Ready Access; includes the use of special splicing techniques, enclosures, test sets and fault locating equipment. Placing, splicing, termination and testing of fiber optic cables in campus applications is included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 151 or TE 9102. Audit available.

ELT 153 Fiber optics: Outside Plant 4.00  Application is ready access, pressurized, direct buried, and pedestrian-type enclosures, and the use of special splicing techniques. Includes test sets and fault locating equipment. Placing, splicing, and testing of fiber optic cables in aerial applications is included. Prerequisites: ELT 151 or TE 9102. Audit available.

ELT 201 Electrical Motor Control 2.00  Provides knowledge and skills needed to design, install, maintain, service and troubleshoot electric motors. Focuses on the operation and installation of control systems, specifically motor starters and controllers. Electromagnetic controls, motors and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 201 and APR 201 cannot both be taken for credit. Prerequisites: FMT 111 or APR 104 or Department Permission. Audit available.

ELT 204 Adjustable Speed Drives 2.00  Covers theory, operation, installation, and maintenance of adjustable speed motor drives. Introduces drive applications and selection for industrial, utility, and commercial structures. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

ELT 210 Electricity for the Non-Electrician II 2.00  Provides practical, hands-on application of residential wiring methods. This class is a direct continuation of the skills developed in Electricity for the Non-Electrician, incorporating additional wiring practices, materials and troubleshooting methods. Emphasizing safety and workmanship as well as electrical theory and building codes as they apply to the homeowner. Prerequisites: ELT 110 or TE 9071. Audit available.

ELT 220 OSHA 30 Hr Safety Training 3.00  Provides practical, hands-on application of residential wiring methods. This class is a direct continuation of the skills developed in Electricity for the Non-Electrician, incorporating additional wiring practices, materials and troubleshooting methods. Emphasizing safety and workmanship as well as electrical theory and building codes as they apply to the homeowner. Prerequisites: ELT 110 or TE 9071. Audit available.

ELT 225 Advanced Programmable Controllers, PC Based 2.00  Covers advanced features of Programming controllers including designing, monitoring, troubleshooting and editing techniques with practical hands-on experience. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 126 or TE 9121. Audit available.

ELT 226 Basic Human Machine Interface (HMI) Program 2.00  Develops the student’s understanding of the basic operation and programming techniques of Human Machine Interface Devices. The applications, operations, and programming of HMIs are the areas of study with the main emphasis on programming. Computers will be used to program. Prerequisites: ELT 225 or TE 9127. Audit available.

ELT 230 National Electrical Code 3.00  Prepares electricians for state examination as prescribed by Oregon State Building Codes Division. Includes code explanations and application. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 230 and APR 230 cannot both be taken for credit. Audit available.

ELT 231 National Electrical Code II 3.00  Prepares electricians for state examination as prescribed by Oregon State Building Codes Division. Includes code explanations and application. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 231 and APR 231 cannot both be taken for credit. Audit available.

ELT 250 AMP ACT I 1.00  Includes an overview of premises cabling systems, and in-depth review of the ANSI/TIA/EIA and ISO/IEC industry standards, and a discussion and hands-on practicum on the rough-in, installation, management, and termination of shielded and unshielded twisted pair and optical fiber cabling systems. The course is about 85% hands-on and is designed with a systems approach instruction method. Successful completion of the course examination will certify you as an AMP Registered Installer. Audit available.

ELT 251 AMP ACT II 1.00  Students will obtain the experience necessary to certify and document twisted pair and optical fiber cable plants based on established industry standards, which include ANSI/TIA/EIA-568A, TSB-67, ANSI/EIA/TIA-568-144A and ANSI/TIA/EIA-568-7. Each student will also obtain experience troubleshooting common problems with installed LAN cable plants. This course is approximately 75% hands-on training. An extensive documentation package is provided. Successful completion of the
course examination will certify you as an AMP Registered Certifier and Troubleshooter. Prerequisites: ELT 250 or TE 9201. Audit available.

ELT 252 AMP ACT III 1.00 Designed for individuals involved in the design and installation of premises cabling systems. This course progresses through a step-by-step process from the initial design analysis through the final actual project presentation based on the guidelines of the TIA/EIA/ISO standards. The student design decision rationale regarding network platforms and technologies, cabling architectures, and media selection is discussed in detail. Successful completion of the course examination will certify you as an AMP Registered Designer. Audit available.

ELT 280 Electrical Code Changes 0.50 Emphasizes how code changes from the previous adopted code differs from the newly adopted codes. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 281 NEC Ratings 0.50 Includes the study of explanation of approved Underwriter labs and testing standards as related to the purchase and use of electrical equipment. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 282 Grounding and Bonding 0.50 The study of Article 250 in the NEC. Covers what has to be grounded and bonded and standards and rules associated with such. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 283 Code Calculations 0.50 Provides licensed electricians with current National Electric Code procedures on how to calculate electrical loads and applications. Includes tables to calculate loads and proper use of applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 284 Motor Controls 0.50 Focuses on code articles related to motor controlled systems, starters, controllers and transformers. Safety also covered. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

EM 101 Introduction to Emergency Services 4.00 Covers a broad range of emergency services providers and the relationships between these service providers and the community. Includes history, organizational structure, terminology, training and standards, legal and ethical responsibilities of Police, Fire, Emergency Medical, 9-1-1 and Emergency Management, as well as joint responses. Audit available.

EM 103 Introduction to Radio Communications 3.00 Introduces the technology of two-way radio communications, as applied to emergency services. Introduces how telecommunicators provide the communications link between agencies, field responders and the public. Includes the operation and components of two-way radio and proper radio broadcasting procedures for all First Responders. Prerequisite: WR 115. Audit available.

EM 110 Theory of Emergency Management 3.00 Introduces emergency management theory, including basic definitions, identification of hazards, descriptions of the phases of emergency management, identification of resources, roles and responsibilities of emergency managers, and coordination of various systems. Recommend: WR 115. Audit available.

EM 114 History of U.S. Hazards, Disasters and Emergency Management 4.00 Surveys the U.S. History of hazards and disasters and traces the evolution of emergency management. Emphasis will be on naturally occurring disasters with appropriate attention to the development of technological incidents and the evolution of terrorism. Recommend: WR 115. Audit available.

EM 202 Principles & Practices of Hazard Mitigation 3.00 The disaster mitigation goal of governments is to develop disaster resistant communities. This course identifies hazard risks and associated mitigation programs and strategies and how to identify local mitigation opportunities and cost effective solutions. Prerequisite: EM 114. Audit available.

EM 203 Principles & Practices of Disaster Response I 4.00 Unveils the principles that promote effective disaster response practices in operations and management. It will examine the nature of disasters, the context of response operations, and the roles and responsibilities of various individuals and organizations. This is the first of a two part sequence: EM 203 and 204. Prerequisite: EM 110 and EM 114. Audit available.

EM 204 Principles & Practices of Disaster Response II 4.00 Continues the investigation of response operations and management by focusing on various management systems. The Incident Command System, are command, multi-agency coordination systems, joint information system and other systems will all be examined. Prerequisite: EM 203. Audit available.

EM 205 Disaster Recovery Operations 3.00 Covers the basic concepts and operational procedures and authorities involved in recovering from major disasters. It addresses Federal, State, and local government roles and responsibilities in major disaster recovery work, with an emphasis on government coordination and the solution of problems that frequently arise in recovery operations. Prerequisites: EM 110 and EM 114. Audit available.

EM 210 Emergency Management Planning for Hazards & Disasters 4.00 Course will examine the concepts of writing an emergency operating plan and the elements necessary for inclusion in the plan (all-risk hazards planning). Students will begin with the process for identifying local hazards and resources, vulnerability and impact analysis, and public policy considerations. Using groups they will analyze their hazard assessments and write a basic plan. The groups will present their plans to the whole class for critique. Actual emergency operating plans will be used to illustrate the planning requirements and results. Prerequisites: EM 110 and EM 114 and WR 121. Audit available.

EM 211 Public Policy & Law in Emergency Management 3.00 Provides the student with specialized knowledge and skills necessary to develop public policy related to emergency management. Course emphasizes policy leadership in the area of emergency planning and response as part of the larger responsibility to protect the general welfare of the people community, all within existing federal, state and local laws. Prerequisite: EM 110 Audit available.

EM 221 Business Continuity or Resumption of Operations Planning 3.00 Address the critical dependence of modern organizations on disaster vulnerable technology, such as management information, communications, and computerized process control systems. Students will have the opportunity to produce working plans that provide preventative measures to minimize disaster impact, provide an organized response, and ensure business continuity during recovery. Prerequisites: EM 114 & WR 121. Audit available.

EM 222 Disaster Exercise Design and Evaluation 3.00 Provides the student with an understanding of how different types of disaster exercises are written and conducted. Exercises are a necessary training tool for all emergency response organizations to test new skills, technology and competency. Prerequisites: EM 203, EM 204, and EM 205. Audit available.

EM 223 Terrorism 3.00 Introduces the issues of terrorism, the organizations and key characters in both international and domestic terror. The course also introduces the various agents and delivery systems of weapons of mass destruction. Recommend: WR 115. Audit available.

EM 100 Introduction to Emergency Medical Services 3.00 Covers the roles and responsibilities of the EMT, emergency medical services system, medical-legal considerations, major incident response, hazardous materials awareness, and stress management. Audit available.

EMS 105 EMT Part I 5.00 Develops skills for the recognition of symptoms of illness and injuries and proper procedures of emergency care. Requires passing criminal background check and drug screen before placement into mandatory clinical observation.
in hospital emergency department and ambulance ride-along experience. Part 1 of the 2-part Oregon EMT course. Department permission required. Prerequisite: WR 115; MTH 20; RD 90; current HCP CPR card.

**EMS 106 EMT Part II 5.00** Continues EMS 105, Oregon EMT preparation. Includes preparation for state and national certification exams. Department permission required. Prerequisite: Successful completion of EMS 105 at PCC within the last year; current HCP CPR card.

**EMS 113 Emergency Response Communication/Documentation 2.00** Covers principles of therapeutic communication, verbal, written, and electronic communications in the provision of EMS; documentation of elements of patient assessment, care and transport; communication systems, radio types, reports, codes, and correct techniques. Prerequisite: EMS 105. Audit available.

**EMS 114 Emergency Response Patient Transportation 2.00** Covers ambulance operations, laws, maintenance and safety, emergency response driving and route planning. Prerequisite: EMS 105.

**EMS 115 Crisis Intervention 3.00** Covers intervention in behavioral crises of sudden death, suicide, rape, murder, vehicle accidents, disease, trauma, and child abuse. Includes resources, supporting behavioral patterns and handling emotional stress of the individual as well as coping with emotional conflict within one's self. Audit available.

**EMS 116 Emergency Medical Services Rescue 3.00** Covers the elementary procedures of rescue practices, systems, components, support and control of rescue operations including ladder procedures and basic rescue tools. Introduces techniques and tools of patient extrication, emphasizing application to traffic accidents. Prerequisite: EMS 105.

**EMS 118 EMS Medical Terminology 3.00** Analysis of anatomical roots, prefixes, and suffixes, and Greek and Latin verbs and adjectives. Helps build a medical vocabulary. Examination of representative anatomical structures, diseases, procedures, tumors, and descriptive terms by simple analysis of words. Audit available.

**EMS 120 Emergency Medical Services: First Responder 3.00** For those who are usually the first person at the scene of trauma or medical emergencies including law enforcement, fire department personnel, etc. Knowledge and skills are developed to provide basic care for trauma, medical and environmental emergencies; evaluation of scene and patients; and appropriate access and use of the Emergency Medical Services System. Must be 16 years of age. Audit available.

**EMS 240 Paramedic I 13.00** Didactic portion covers illness and injury prevention, medical legal issues and well-being of the paramedic. Patient care topics include advanced airway, medication math, general principles of pathophysiology of shock, trauma assessment, kinematics, pharmacology, toxicology, drug and alcohol abuse, infection disease, endocrinology, OB/GYN, neonatology, cardiovascular system, EKG monitoring. There will be associated practical labs. Students will be certified in Pre-Hospital Life Support (PHTLS). Department permission required. Prerequisite: WR 121, MTH 60/65, BI 101 BI 231, BI 232, EMS 100, EMS 106, EMS 113, EMS 114, EMS 115, EMS 116, EMS 118. Audit available.

**EMS 242 Paramedic II 9.00** Didactic portion covers EKG review, pediatric, geriatric, acute abdomen, burns, psychiatric disorders, dealing with death and the dying, crime scene preservation, Hazmat awareness, environmental conditions, advanced airway. Students will be certified in Pediatric Education for Pre-hospital Professional (PEPP) and Advance Cardiac Life Support (ACLS). There will be associated practical labs. Department permission required. Prerequisite: EMS 240. Audit available.

**EMS 244 Paramedic Clinical Internship I 3.00** Begin in-hospital clinical experiences including direct patient care responsibilities necessary for completion of the educational objectives. Patients are in a hospital/clinical setting with disease and injury conditions comparable to those the student will experience in the pre-hospital care situations. Department permission required. Prerequisite: EMS 240.

**EMS 245 Paramedic Clinical Internship II 4.00** Complete in-hospital clinical experience to include direct patient care responsibilities necessary for completion of the program's objectives. The patients in the hospital/clinical setting shall have disease and injury conditions comparable to those the student will experience in the pre-hospital care situation. Department permission required. Prerequisite: EMS 244.

**EMS 248 Paramedic Field Internship II 12.00** Begins field experience designed to expose students to disease and injury conditions. This segment begins the required 200 hours and number of calls necessary to fulfill the State curriculum. Department permission required. Prerequisite: EMS 244.

**EMS 250 Paramedic Field Internship II 7.00** Complete the field experience necessary to fulfill the required hours and calls necessary for state certification. Department permission required. Prerequisite: EMS 248.

**EMS 252 Paramedic III 2.00** Students successfully complete course final written and practical exam and prepare for the State and National Registry written and practical exam. Department permission required. Prerequisite: EMS 248. Audit available.

**ENG 104 Introduction to Literature (Fiction) 4.00** Enhances enjoyment of various forms of fictional prose, increases understanding of the conventions of fiction and various forms of storytelling, and encourages exploration of the diversity of human experience. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 105 Introduction to Literature (Drama) 4.00** Enhances enjoyment of plays as literature, including tragedies and comedies; increases understanding of the conventions of drama and the theater; and encourages exploration of the diversity of human experience. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 106 Introduction to Literature (Poetry) 4.00** Enhances enjoyment of poetry, increases understanding of poetic elements, conventions and forms, and encourages exploration of the diversity of human experience. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 107 World Literature 4.00** Introduces a broad spectrum of literature in translation that begins in antiquity and concludes at the dawn of the Renaissance. Includes works of fiction, poetry, drama and non-fiction. Examines the uniqueness and interconnectedness of literature from a variety of worldwide traditions, both western and non-western. This series (ENG 107-108) does not have to be taken in sequence. The first of a two course survey of World literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 108 World Literature 4.00** Introduces a broad spectrum of literature in translation that begins in the Renaissance and concludes at the present. Includes works of fiction, poetry, drama and non-fiction. Examines the uniqueness and interconnectedness of literature from a variety of worldwide traditions, both western and non-western. This series (ENG 107-108) does not have to be taken in sequence. The second of a two-course survey of World literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 195 Film Studies: Film as Art 4.00** Enhances understanding of film through analysis of film history and form. Develops visual literacy and analysis skills by offering a range of tools to study any film. Analyze ways in which a film may both contribute and react to its time and culture; analyze film through studying the techniques by which it was made; and substantiate observations with examples taken from film tradition and from the film itself. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 196 Film Studies: Directors 4.00** Enhances understanding of film through analysis of directorial decisions and film techniques. Develops visual literacy and analysis skills by offering a range of tools to study any film. Analyze ways in which directorial decisions may affect an individual film and viewer; situate a film within a director's body of work; analyze ways in which it may both contribute and react to its time and culture; and substantiate observations with
examples taken from the film tradition and from the film itself. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 197 Film Studies: Contemporary Themes and Genres 4.00 Enhances understanding of film through analysis of contemporary film-making, narrative techniques, genres, themes and critical approaches. Develops visual literacy and analysis skills by offering a range of tools to study any film. Analyze contemporary film techniques and the ways in which the films may both contribute and react to their time and culture; study contemporary film theory; and substantiate observations with examples taken from the film tradition and from the film itself. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 201 Shakespeare: Early Works 4.00 Explores the development of Shakespeare's art and contribution to literature, culture, and the English language, with a focus on the earlier histories, tragedies, comedies, and non-dramatic poetry. Introduces the study of Shakespeare's dramatic techniques, character development, historical and cultural setting, and language. Recommended prior coursework: ENG 105 and 106. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 202 Shakespeare: Later Works 4.00 Explores the development of Shakespeare's art and contribution to literature, culture, and the English language, with a focus on the later histories, tragedies, comedies, and non-dramatic poetry. Introduces the study of Shakespeare's dramatic techniques, character development, historical and cultural setting, and language. Recommended prior coursework: ENG 105, 106 and 201. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 204 Survey of English Literature 4.00 Literature of the British Isles: Medieval and Renaissance selections, from Beowulf to Shakespeare. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 205 Survey of English Literature 4.00 Literature of the British Isles: seventeenth, eighteenth, and early nineteenth century selections, from Donne through the Early Romantics. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 207 World Literature - Asian (India) 4.00 Introduces students to Indian literature in English (for the most part, translated) from ancient to contemporary. May include such works and authors as hymns from the Rig Veda, The Ramayana, classical poetry, and the twentieth century authors Narayan, Ved Mehta and Arundhati Roy. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 208 World Literature - Asian (China) 4.00 Introduces Chinese literature translated into English, from the oldest texts (ca. 1000 BCE) to contemporary works. Includes poetry, fiction, nonfiction, drama, and film. Examines the cultural and historical importance of Confucianism, Daoism, and Buddhism on Chinese literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 209 World Literature - Asian (Japan) 4.00 Introduces a range of Japanese texts and films in order to explore the artistic, social, political, and historical characteristics of Japanese literature from the earliest poems to contemporary novels. Explores movements in literary and artistic traditions from multiple periods (e.g., Heian, Meiji) and analyzes how texts emphasize or resist the values of each historical moment. Considers issues of social class, religion, and aesthetics as they apply to creative works. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 210 World Literature - European 4.00 Explores a wide range of literature written for children and teens and introduces the history of this literature focusing on American and British writing as well as international and multicultural traditions. Examines the differences between literature for children and teens and literature for adults, the relationship between text and illustrations, and other issues and controversies concerning children's literature such as the didactic use of text and censorship. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 212 Biography and Autobiography 4.00 Studies biographies, autobiographies, memoirs, and journals as works of literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 213 Latin American Literature 4.00 Explores fiction, creative non-fiction, poetry, drama, myth, and other texts from Latin America. Includes works from many cultures and ethnicities from Latin America, including indigenous peoples. All readings are in English. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 214 Introduction to Folklore and Mythology 4.00 Explores images of women as they appear in a diverse range of texts from across a variety of cultures and historical periods. Focuses on how both men and women have imagined and represented femininity and femaleness in ways that can challenge, reinforce and/or reconfigure culturally-based perceptions, behaviors and practices. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 215 Literature of Genocide 4.00 Introduces a range of international texts and films pertaining to genocide in order to explore the social, cultural, political, and historical conditions that have led to genocide, the conditions it creates for its victims, and its aftermath. Explores experiences of individuals, later generations, and nations, including issues of exile and reconciliation. Considers memoirs, fiction, poetry, literary nonfiction, documentaries and feature films created by survivors and others. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 216 Teen and Children's Literature 4.00 Explores a wide range of literature written for children and teens and introduces the history of this literature focusing on American and British writing as well as international and multicultural traditions. Examines the differences between literature for children and teens and literature for adults, the relationship between text and illustrations, and other issues and controversies concerning children's literature such as the didactic use of text and censorship. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 217 American Working Class Literature 4.00 Introduces students to literature by and/or about the working class, primarily from an American perspective. Prerequisite: Placement into WR 121. Recommended: ENG 104, ENG 105 and/or ENG 106. Audit available.

ENG 218 World Literature - Asian - American 4.00 Studies oral and written compositions by Native Americans from both before and after contact with Euro-Americans. Provides historical, geographical, political, social, cultural, religious, linguistic, aesthetic, and ethnopoetic contexts for understanding the various tribal literatures studied. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 219 Introduction to Asian-American Literature 4.00 Studies writings in English by American writers of Chinese, Japanese, Korean, Vietnamese, Filipino, Pacific Islander, and other Asian ancestry. Considers the writings in their historical, cultural, political, and social contexts. Emphasizes development of attitudes, values, and identities. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 220 Introduction to Native American Literatures 4.00 Studies oral and written compositions by Native Americans from both before and after contact with Euro-Americans. Provides historical, geographical, political, social, cultural, religious, linguistic, aesthetic, and ethnopoetic contexts for understanding the various tribal literatures studied. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 221 Images of Women in Literature 4.00 Explores images of women as they appear in a diverse range of texts from across a variety of cultures and historical periods. Focuses on how both men and women have imagined and represented femininity and femaleness in ways that can challenge, reinforce and/or reconfigure culturally-based perceptions, behaviors and practices. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 222 Images of Women in Literature 4.00 Explores images of women as they appear in a diverse range of texts from across a variety of cultures and historical periods. Focuses on how both men and women have imagined and represented femininity and femaleness in ways that can challenge, reinforce and/or reconfigure culturally-based perceptions, behaviors and practices. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 223 American Working Class Literature 4.00 Introduces students to literature by and/or about the working class, primarily from an American perspective. Prerequisite: Placement into WR 121. Recommended: ENG 104, ENG 105 and/or ENG 106. Audit available.

ENG 224 Introduction to Asian-American Literature 4.00 Studies writings in English by American writers of Chinese, Japanese, Korean, Vietnamese, Filipino, Pacific Islander, and other Asian ancestry. Considers the writings in their historical, cultural, political, and social contexts. Emphasizes development of attitudes, values, and identities. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 225 Introduction to Folklore and Mythology 4.00 Explores images of women as they appear in a diverse range of texts from across a variety of cultures and historical periods. Focuses on how both men and women have imagined and represented femininity and femaleness in ways that can challenge, reinforce and/or reconfigure culturally-based perceptions, behaviors and practices. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 226 Transnational Literature 4.00 Examines the themes of Transnational Literature, such as migration, exile and displacement and revolves around literary responses to various historical and cultural moments of transition or crisis. Explores the relationships between a text, its author, and its national, cultural and/or linguistic boundaries. Prerequisite: Placement into WR 121. Audit available.

ENG 227 Introduction to Folklore and Mythology 4.00 Develops a cross-cultural perspective on myths, mythologies and folklore from around the world. Explores different theories of the cultural meanings and functions of myth, past and present. Introduces various ways of interpreting and experiencing myth and folklore as texts with oral origins. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 228 American Literature to 1865 4.00 Introduces the literature of the land which is now the United States from before European contact through the mid-nineteenth century. Revolves around written manifestations of the various interests, preoccupations,
and experiences of the peoples creating and recreating American culture. Considers various literary forms, canonized (such as novel, narrative poem), popular (such as the serialized tale, verse) and unpublished (the jeremiad, Native American oratory, the slave narrative, diary). Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 254 American Literature from 1865**

4.00 Introduces students to the literature of the land which is now the United States from the mid-nineteenth century to the present. The course revolves around written manifestations of the various interests, preoccupations, and experiences of the peoples creating and recreating American culture. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 256 African-American Literature 4.00**

Introduces the literatures of the American people whose roots are in Africa. Investigates African civilization and writers of African descent up to the period of Reconstruction. Explores American and European slave narratives, as well as the African origins of African-American writing and storytelling. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 257 African-American Literature 4.00**

Introduces the literature of Americans whose roots are in Africa. The course explores the period of Reconstruction through Harlem Renaissance. It incorporates novels, short stories, poems, journalism, autobiographies and plays. Focuses on the oral tradition and written texts of African Americans. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 258 African-American Literature 4.00**

Introduces the literature of the African-American and African-American Diaspora. Includes the oral tradition and written texts of African Americans. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 260 Introduction to Women Writers 4.00**

Explores women's writings and literary theory from diverse places and historical periods. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 261 Literature of Science Fiction 4.00**

Explores the roots of science fiction as well as classic and modern works of science fiction and speculative literature. Introduces common themes in science fiction, the various ideological underpinnings of science fiction, and the way such literature comments on current issues in society and presents new ideas to society. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 265 International Political Poetry 4.00**

Develops students' understanding of how poets address issues of class oppression, economic inequality, racism, sexism, war, and peace. Shows how poets function as prophets, precursors, dissidents, and recorders. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 266 Literature of War 4.00**

Introduces a range of international texts and films pertaining to war in order to explore the social, cultural, political, and historical conditions that have led to war, the experiences of those directly and indirectly involved in war, as well as its aftermath. Explores various perspectives, including those of combatants and their families, innocent victims, returning soldiers and veterans, and later generations. Considers the many complex questions about the evolving definitions of war; the morality of war; the roles of race, gender and religion in war; the roles of propaganda and anti-war movements; the ways in which wars are remembered and forgotten; and the possibilities for peace. Considers memoirs, fiction, poetry, literary nonfiction, graphic novels, documentaries and feature films created by both combatants and civilians. Prerequisite: Placement into WR 121. Audit available.

**ENG 275 The Bible as Literature 4.00**

Explores the Bible as a literary text by discussing authorship, translation, literary forms, history, and cultural context. Discusses the Bible as a point of reference for literature as well as for other works of art. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

**ENG 284 Engineering Graphics 3.00**

Introduces manual and computer-aided drafting including hand sketching, drafting standards, pictorial drawings, and dimensioning. Includes creation of 2-D drawings and 3-D solid models with AutoCAD. Prerequisite: ENGR 101. Audit available.

**ENG 114 Engineering Programming 4.00**

Introduces structured programming with applications to engineering problems. Prerequisite: ENGR 101 or department-approved equivalent. Audit available.

**ENG 171 Introduction to Logic Design 5.00**

Introduces switching theory and logic design. Number systems, logic families, Boolean algebra, minimization, flip-flops, registers and counters, are covered. Analysis and design of finite state machines with discrete and programmable devices. Prerequisite: ENGR 221. Audit available.

**ENG 211 Statics 4.00**

Analysis of forces acting on particles and rigid bodies. Force systems, centroids, and moments of inertia are covered. Scientific, programmable, graphing calculator required. Prerequisites: MTH 252, PHY 211; ENGR 101. Audit available.

**ENG 212 Dynamics 4.00**

Kinematics and kinetics of particles and rigid bodies are analyzed by Newton's laws, work-energy and impulse-momentum methods. Prerequisite: ENGR 211. Audit available.

**ENG 213 Strength of Materials 4.00**

Relationships between stress and strain in deformable solids are studied. Analysis is applied to axially-loaded members, circular shafts, beams and columns. Combined stresses, stastically indeterminate systems and properties of structural materials are included. Prerequisite: ENGR 211. Audit available.

**ENG 221 Electrical Circuits I 5.00**

Introduces students to basic circuit elements and circuit analysis techniques. Covers Ohm's and Kirchhoff's Laws, network theorems, node voltage analysis and mesh current analysis. Operational amplifiers, inductors, capacitors, RC and RL transient response are also covered. Circuit simulation, math analysis software, and laboratory experiments are incorporated to solidify classroom theory and practice. Recommend: MTH 253 and PHY 213. Prerequisites: ENGR 101; MTH 252. Audit available.

**ENG 222 Electrical Circuits II 5.00**

Covers RLC circuits, transformers, AC power, and three phase power. Explores steady state sinusoidal analysis and phasor techniques. Introduces the Laplace Transform. Also incorporated is circuit simulation, math analysis software, and laboratory experiments to solidify classroom theory and practice. Prerequisite: ENGR 221. Audit available.

**ENG 223 Electrical Circuits III 5.00**

Covers Laplace Transform analysis. The transfer function, convolution, bode plots, and Fourier series are used to analyze circuits. Passive and active filters are designed and analyzed using these new circuit analysis techniques. Circuit simulation, math analysis software, and laboratory experiments are incorporated to solidify classroom theory and practice. Prerequisite: ENGR 222 Prerequisite or concurrent enrollment: MTH 256.
ENGR 226 Plane Surveying 4.00 Introduces basic concepts of plane surveying. Includes use of tape, level, transit, electronic total station (ETS), along with horizontal and vertical control networks. Includes network calculations and adjustments, angles, and bearings, and topographic surveying and mapping. Prerequisite: ENGR 101 and 102. Audit available.

ENGR 231 Material Science 4.00 Selection of materials for modern engineering applications. Structure and properties of metals, ceramics and polymers starting with fundamental atomic arrangements. Microstructural control through terminal and mechanical processing and effects of service environment are covered. Prerequisites: PHY 211; MTH 252; (CH 201 or 222). Audit available.

ENGR 262 Manufacturing Processes 4.00 The interaction of design with industrial materials and processes is considered in connection with technical and economic feasibility, trade-offs and automation. Prerequisite: ENGR 101 and 102 Audit available.

ENGR 275 Microprocessor Systems 4.00 Introduces X86 microprocessor architecture and assembly language programming for the IBM PC compatible computer, including the use of BIOS and DOS functions calls and the use of procedures. Structured programming techniques will be used to write programs that accept keyboard input and create displayed results. Appropriate program testing and debugging methods will be emphasized. Includes a 3-hour per week laboratory. Prerequisite or concurrent: ENGR 171. Audit available.

ENGR 280A Cooperative Education: Engineering For students employed in an approved co-op education position with a local company. Credits do not ordinarily transfer for an engineering degree. Department permission required. Audit available.

ENGR 44 Level 4 Communication 4.00 The fourth level of ESOL and the first of a five-course sequence that focuses on communication. Identification and production of English stress and intonation; certain vowels and consonants; reductions. Listening comprehension for main idea and important details, grammatical structures, questions, and key vocabulary words. Discussion skills. Speaking using important language functions including asking for clarification, agreeing, and negotiating meaning. Short, prepared presentation. Communication taught in the context of communicating in adult life roles. Prerequisites: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 40/40N and ESOL 42/42N or higher. Audit available.

ESOL 150 Level 5 Reading 4.00 The fifth level of ESOL and the second of a five-course sequence that focuses on reading: content comprehension, textual analysis, critical thinking skills, study skills, and language analysis. Using the dictionary, finding main ideas, summarizing, inferencing, using context clues, reviewing prereading techniques; study of word forms, common affixes, synonyms, and antonyms. Readings from textbooks and literature taught in the context of academic and adult life roles. Prerequisites: Placement in ESOL 150/150N and ESOL 152/152N and ESOL 154/154N or higher. Audit available.

ESOL 152 Level 5 Writing 4.00 The fifth level of ESOL and the second of a five-course sequence that focuses on writing. Covers descriptive, narrative, process, and comparison/contrast essays. Review of verb tenses, sentence types, punctuation, and spelling patterns. Introduction to adverb and adjective clauses, reported speech, passive voice, gerunds and infinitives. Prerequisite: ESOL placement test OR successful completion of ESOL 152/152N; AND concurrent placement in ESOL 150/150N and ESOL 154/154N or higher. Audit available.

ESOL 162 Level 6 Academic Writing 5.00 Review of the writing process and development of the essay. Covers descriptive, narrative, process, and comparison/contrast essays. Review of verb tenses, sentence types, punctuation, and spelling patterns. Introduction to adverb and adjective clauses, reported speech, passive voice, gerunds and infinitives. Prerequisite: ESOL placement test OR successful completion of ESOL 152/152N; AND concurrent placement in ESOL 150/150N and ESOL 154/154N or higher. Audit available.
common sound substitutions; intonation, phrasing, reductions and stress patterns. Listening comprehension and discussion. Public speaking, including prepared speeches with written outlines on academic topics. Prerequisites: ESOL placement test OR successful completion of ESOL 154/154N AND concurrent placement in ESOL 150/150N and ESOL 152/152N or higher. Audit available.

ESOL 230 Advanced English Skills Review 2.00 Reviews advanced academic listening, reading, writing, and speaking skills. Develops strategies for taking time-sensitive tests, including the TOEFL. Prerequisites: Placement into ESOL 254 AND ESOL 250 AND ESOL 252 or higher OR successful completion of ESOL 164 AND ESOL 160 AND ESOL 162. Audit available.

ESOL 240 American Culture and Communication 2.00 Continued illustration of American cultural themes and values. Instruction through reading, discussion, journal-writing, film and speeches. Overview and application of academic study skills. May include a service learning component. Does not replace courses in the core curriculum. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher. Audit available.

ESOL 250 Level 7 Academic Reading 5.00 Develops advanced English reading skills. Focuses on reading materials such as textbooks, novels, short stories and articles. Includes finding themes and main ideas, summarizing, paraphrasing, making inferences, using context clues, and reviewing prereading techniques. Continues the study of word forms, common affixes and stems, and figurative language. Incorporates content comprehension, textual analysis, critical thinking, study skills and language analysis. This is the fourth course of a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 160 within the past 12 months AND concurrent enrollment in ESOL 162 and ESOL 164 or higher. Audit available.

ESOL 251 Advanced Supplementary Writing 3.00 Emphasizes the refinement and development of conscious control of English sentence and paragraph structures as well as the correction of persistent errors in writing. ESOL 253 provides a bridge course between ESOL 252 and ESOL 262 or between ESOL 262 and WR 115. Audit available.

ESOL 252 Level 7 Academic Writing 5.00 Develops advanced writing skills. Reviews the writing process with descriptive and expository essays and improves skills with grammar and mechanics. Explores concepts including but not limited to the cultural expectations related to a U.S. academic environment and the use of outside readings to support one’s ideas and opinions in writing. This is the fourth course of a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 162 within the past 12 months AND concurrent enrollment in ESOL 160 and ESOL 164 or higher. Audit available.

ESOL 253 Grammar 3.00 This elective class includes the identification and practice of the following grammatical structure: models, conditionals clause and phrase reductions, parallel structures, and reported speech. It is designed to reinforce concepts in both oral and written contexts. Does not replace courses in core curriculum. Audit available.

ESOL 254 Level 7 Academic Communication 5.00 Develops advanced English communication skills. Focuses on listening and note taking, pronunciation, discussion, academic presentation skills, and public speaking. This is the fourth course in a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 164 within past 12 months AND concurrent enrollment in ESOL 250 and ESOL 252 or higher. Audit available.

ESOL 256 Level 8 Academic Reading 5.00 Develops upper-advanced English reading skills. Focuses on reading materials such as textbooks, novels, short stories and articles. Includes finding themes and main ideas, summarizing, paraphrasing, making inferences, evaluating sources and analyzing arguments. Incorporates content comprehension, textual analysis, critical thinking, study skills and language analysis. This is the fifth course of a five-course sequence. Prerequisite: ESOL Placement test OR successful completion of ESOL 250 within the past 12 months AND concurrent enrollment in ESOL 252 and ESOL 254 or higher. Audit available.

ESOL 262 Level 8 Academic Writing 5.00 Develops upper-advanced writing skills. Includes grammar and mechanics, and builds upon expository essay styles by introducing outside research. Explores concepts including but not limited to the cultural expectations related to a U.S. academic environment with an increased emphasis on basic research conventions. This is the fifth course of a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 250 within the past 12 months AND concurrent enrollment in ESOL 252 and ESOL 254 or higher. Audit available.

ESOL 264 Level 8 Academic Communication 5.00 Develops upper-advanced English communication skills. Focuses on listening and note taking, pronunciation, discussion, academic presentation skills, and public speaking. This is the fifth course of a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 250 within the past 12 months AND concurrent enrollment in ESOL 260 and ESOL 252 or higher. Audit available.

ESOL 265 Level 8 Academic Communication 3.00 Students develop strategies to improve spoken intelligibility, critical thinking, and listening and note taking skills in public speaking with written outlines on academic topics, including those requiring basic argument and persuasion. Prerequisites: ESOL placement test OR successful completion of ESOL 254; AND concurrent placement in ESOL 250 and ESOL 252 or higher. Audit available.

ESOL 267 Level 8 Pronunciation 2.00 Review English consonants and vowels, intonation, phrasing, and stress patterns. Prerequisites: ESOL placement test OR successful completion in ESOL 254; AND concurrent placement in ESOL 250 and ESOL 252 or higher. Audit available.

ENVIRONMENTAL STUDIES

ESR 140 Introduction to Environmental Sustainability 4.00 Introduces concepts of environmental sustainability and their applications. May include field trips. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 150 Environmental Studies Orientation 1.00 Serves to orient students to environmental information available through campus library and computer resources. Uses assignments aimed at gathering and summarizing information on academic preparation of environmental professionals. Audit available.

ESR 160 Intro to Environmental Systems 4.00 Introduces the structure and function of terrestrial, aquatic and atmospheric systems, including the human actions that affect them. Includes lab sections that introduce basic quantitative techniques for collecting and analyzing data from environmental systems. Prerequisite: ESR 150 (may be taken concurrently). Audit available.

ESR 171 Environmental Science: Biological Perspectives 4.00 Develops an understanding of environmental topics that are primarily biological in nature. Includes human population issues, matter and energy resources, ecosystems, environmental ethics, and food and land resources. The associated laboratories will illustrate these topics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 172 Environmental Science: Chemical Perspectives 4.00 Develops an understanding of environmental topics that are primarily chemical in nature. Includes air pollution, global warming, toxicology, risk assessment, water pollution, and hazardous waste. The associated laboratories will illustrate these topics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 173 Environmental Science: Geologic Perspectives 4.00 Develop an understanding of environmental topics that are primarily geological in nature. Includes geology basics, soil resources, hydrogeology, nonrenewable mineral and energy resources, perpetual energy resources, and solid waste. The associated laboratories will illustrate these topics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 201 Applied Environmental Stud-
ies: Science/Policy Consideration 4.00  
Introduces environmental laws and the regulations promulgated under them. Includes examinations of the genesis of these laws (e.g. NEPA, Clean Air and Water Acts, RCRA, Endangered Species Act) and their history of compliance and violation. Prerequisite: ESR 160. Audit available.

ESR 202 Applied Environmental Studies: Prep for Problem Solving 4.00  
Includes environmental sampling, sampling design, and measurement in relation to the field experience. Prerequisite: ESR 160. Audit available.

ESR 203 Applied Environmental Studies: Project 4.00  
Uses project work involving work with an environmental agency, industry, service or research organization. Prerequisite: ESR 202. Audit available.

ESR 298 Special Topics: Environmental Science  
Covers special topics, activities or projects in an area of environmental science not usually covered in depth in other environmental science courses. Audit available.

EMERGENCY TELECOMM./911 DISPATCHER

ETC 103 Introduction to Emergency Telecommunications 4.00  
Introduces the field of emergency communications, including history, roles & responsibilities, operations and equipment with an emphasis on federal, state and local communications systems. Audit available.

ETC 104 Emergency Telecommunications - Call Taking 4.00  
Introduces the field of emergency communications in discipline specific terms; with an emphasis on Fire and Emergency Medical emergencies. Explores issues of privacy of information, confidentiality and liability. Prerequisite: ETC 103. Audit available.

ETC 105 Crisis Intervention & Critical Incident Stress Management 3.00  
Covers the emotional and psychological needs of emergency services personnel in dealing with day to day crisis and trauma situations. Explores the various resources available to responders and to victims. Provides methods and techniques, including Critical Incident Stress Management, for dealing with the high stress of long-term emergency services careers. Audit available.

ETC 106 Introduction to Criminal Law 3.00  
Examines the origin, structure and definitions of common law and statutory crimes as applied to modern society. Uses Oregon Criminal Code and criminal court proceedings to classify specific crimes based upon legal definitions. Audit available.

ETC 108 Transcription for Telecommunicators 2.00  
Develops keyboarding skills based upon information received through various media, but most often aurally. Includes a variety of audio recordings, dictation and role-play to record emergency response information in a computer program and with a variety of software applications, including Word, Excel, CriticalCall and Computer-Aided Dispatch. Recommended keyboarding speed of at least 25 wpm. Audit available.

ETC 110 Communication Center Operations - Basic Skills 3.00  
Introduces the emergency communications simulator lab. Applies methods and theory in an interactive lab setting using radio, telephone, computers and recording equipment. Includes the use of emergency communications equipment and standard operating procedures to simulate actual emergency calls and situations. Audit available.

ETC 111 Communication Center Operations - Intermediate Skills 3.00  
Introduces the art of multi-discipline emergency response dispatching in an emergency communications simulation center. Includes the use of emergency communications equipment and the application of policies, procedures and protocols in the handling of specific situations. Prerequisite: ETC 110. Audit available.

ETC 112 Communication Center Operations- Advanced Skills 3.00  
Covers emergency call-taking and emergency services radio communication in the in the 9-1-1 simulation lab Requires a high level of multi-tasking ability, quick responses and rapid problem-solving skills, as well as a familiarity with 911 computer software and multifunction telephone systems. This is the third course in a three-course sequence. Prerequisites: ETC 111. Audit available.

ETC 115 Emergency Telecommunicator-Capstone 3.00  
Covers the creation of a portfolio documenting course work, activities, education and experience history. Includes the completion of a comprehensive personal history background. Audit available.

ETC 201 Law Enforcement Data System (LEDS) 1.00  
Introduces the State of Oregon Law Enforcement Data System, which provides computer databases for state and local law enforcement and the Criminal Justice Information System, interface with national computer systems. Completion of the LEDS Training Guide provides state certification at the Inquiry level. Students must complete a Criminal Background check and be free of any felony or drug related convictions. Prerequisites: ETC 103. Audit available.

ETC 202 Emergency Medical Dispatch Overview 2.00  
Covers Emergency Medical Dispatching including emergency medical pre-arrival instructions to assist the average citizen in stabilizing and in some cases, treating a medical emergency prior to the arrival of trained medical personnel. Includes the delivery, over the telephone, of specific - physician approved - instructions for a variety of common medical emergencies. Prerequisite/Concurrent: EMS 120 or current 1st Aid/CPR certification. Audit available.

ETC 203A Tactical Dispatching for High Risk Incidents 1.00  
Covers high risk incidents such as kidnapping, hostage situations, and suicidal or mentally unstable persons require a higher level of communication skills and a greater degree of commitment on the part of the first responders and the emergency communications personnel. Test skills in a safe environment through the use of scenarios and role playing. Prerequisite/corequisite: ETC 104. Audit available.

ETC 280A Cooperative Education: Emergency TeleCommunicator  
Students earn credit for learning from practical experience at a worksite related to being an Dispatcher/Call Taker. Appropriate work experiences provide opportunities to build and develop skills necessary to be a successful TeleCommunicator/Dispatcher. May be repeated up to 12 credits. Prerequisite: Completion of 8 ETC credits and 6 credits of lab hours.

FASHION DESIGN

FD 277 Fashion Trend Analysis 3.00  
Introduces fashion trend forecasting process within the apparel industry; use of information sources and trend analysis in developing and promoting a fashion product. Introduction to history of and terminology of apparel design. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FACILITIES MAINTENANCE TECHNOLOGY

FMT 100 Introduction to Facilities Maintenance Systems 2.00  
Overview of industrial maintenance. OSHA approved industrial safety procedures are practiced. Includes use of basic tools and specialized equipment; lubrication, maintenance and repair motors, drive belts, pulley, and sheaves. 
Examines the inter-dependency of related systems. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

FMT 101 Refrigeration I 2.00  
Covers refrigeration principles and different basic cycles which include heat transfer, temperature, and basic physics and gas laws. Lab includes the use of tools and instruments used for charging and evacuation and recovery methods. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

FMT 102 Refrigeration II 2.00  
Covers and analyzes the operation of refrigeration system components. Includes compressors, condensers, evaporators, refrigerants and metering devices. Lab includes system components and compressor testing methods, focusing on charging, evacuation and recovery methods. Prerequisites: MFT 101 and APR 131 or TE 9242. Audit available.

FMT 103 Refrigeration III 2.00  
Covers the operation of refrigeration HVAC systems, emphasizing maintenance and controls. Lab includes troubleshooting systems along with evacuation and charging
FMT 111 Refrigeration Electrical I 2.00
Basic theory and applications of electrical concepts including Ohm’s Law, electric power, and concepts of electric circuits are emphasized. Alternating current, power distribution and installation of HVAC systems using wiring diagrams and schematics are included. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

FMT 112 Refrigeration Electrical II 2.00
Theory and application of electrical motor concepts and electrical circuits are emphasized. Control system components, wiring diagrams and schematics are included. Prerequisites: FMT 111 or TE 9237 Audit available.

FMT 113 Refrigeration Electrical III 2.00
Schematic development and use in diagnosis, service, and repair of HVAC systems; control applications and circuit evaluation. Prerequisites: FMT 112 or TE 9238 Audit available.

FMT 119 Water Treatment and Distribution 2.00
Covers the basics of cooling, tower, boiler, waste water, and water purification systems. Topics include corrosion, scale, fouling and bacteria related issues. Mechanical equipment pertaining to water treatment is included. Audit available.

FMT 122 Introduction to Boilers 3.00
Fundamentals of hydronics systems, heat loss calculations, physical properties of water, types of boilers, piping systems and components for correct fluid flow including circulating pumps. Includes practical maintenance and component identification. Audit available.

FMT 125 Natural Gas Equipment I 2.00
Covers natural gas and its properties, pressures, piping and the mechanical code requirements for natural gas installation. Utilizing basic knowledge gained in this course, students can apply this knowledge to basic diagnosis procedures. Audit available.

FMT 128 Oil Furnace Service 2.00
Covers oil burner service and installation procedures, fuel oil principles, motors, fan couplings, nozzles, transformers burner construction, pumps, controls and troubleshooting procedures. Audit available.

FMT 131 Lock Service and Repair 4.00
Covers maintenance residential and commercial locks and related hardware. Includes basic operating principles of cylinders, types of locking mechanisms, desk type locks, and master key systems. Audit available.

FMT 201 Introduction to Chiller Systems 3.00
Chilled water and its application in the industrial/institutional setting. Covers chiller compressors, refrigerants, air cooled and water cooled condensers, controls and piping. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 202 Direct Digital Control Advanced Technology 3.00
Covers the spectrum of advanced HVAC control applications for commercial building systems. Topics range from the single zone air handler to multi-zone and VAV systems, valve configurations, engineering calculations and how this equipment interfaces to Life Safety systems. Prerequisite: FMT 113. Audit available.

FMT 204 Heat Pumps 3.00
Focuses on operation and service requirements of heat pumps. Demonstrates the application and understanding of the test equipment required to service the heat pumps. Includes the function of the control system required for operation of the heat pump system. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 207 Pneumatic Controls 2.00
Provides HVAC service technician with the proper methods of diagnosing malfunctions in Honeywell control systems. Also covers thermostat/controllers of Robert Shaw, Johnson, Honeywell, and Barber Coleman. Includes elements of pneumatic systems, valve assemblies, dampers, controllers, thermostats, sensors, relays and air supply equipment. Audit available.

FMT 210 Basic HVAC/R Installation & Techniques 2.00
Introduces practical application of HVAC/R installation and techniques. Integrates code requirements and practical field installations; including sheet metal, piping, and venting. Prerequisites: (FMT 112 or TE 9238); (FMT 102 or APR 132 or TE 9243) Audit available.

FMT 213 Commercial Refrigeration Shop 2.00
Troubleshooting, maintenance, and repair of typical commercial refrigeration equipment found in convenience stores, markets, restaurants, and related applications. Prerequisites: (FMT 112 or TE 9238); (FMT 102 or APR 132 or TE 9243) Audit available.

FMT 216 Commercial Systems Design 3.00
Covers refrigeration loads, equipment selection, piping and installation procedures. Focuses on calculating loads for walk-in units, sizing condensing units, and evaporative coils. Includes use of catalogs to locate and properly select components, for design and troubleshooting new and existing applications. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 219 Residential Systems Roofing 3.00
Covers residential heat loads, equipment selection, piping and installation procedures. Calculating loads for residential homes, sizing furnaces, condensing units, and evaporative coils. Includes use of catalogs to locate and properly select components and for design and troubleshooting new and existing applications. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 222 Intermediate Boilers 3.00
Covers the basics of cooling, tower, boiler, waste water, and water purification systems. Topics include corrosion, scale, fouling and bacteria related issues. Mechanical equipment pertaining to water treatment is included. Audit available.
FP 101 Principles of Emergency Services 3.00 Introduces the Emergency Services. Explores career opportunities and requirements for emergency service responders. Related topics will be introduced such as nomenclature, history, basic chemistry and physics of emergency situations, life safety initiatives, laws and loss analysis. Introduces fire protection systems, specific fire protection functions, organization and function of public and private emergency services. This course is the prerequisite for FP 111. Audit available.

FP 111 Fire Academy Part 1 10.00 Covers basic tools, procedures, techniques and safety precautions utilized by firefighters, during fire ground operations. Includes comprehensive training in individual firefighting skills. Involves transfer of knowledge obtained from classroom instruction to drill ground application, during hands-on training. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and FP 101.

FP 112 Fire Academy Part 2 7.00 Covers tools, procedures, techniques and safety precautions utilized by firefighters, during fire ground operations. Includes comprehensive training in firefighting skills related to fire company evolutions. Involves transfer of knowledge obtained from classroom instruction to drill ground application, during hands-on live fire training. Prerequisite: FP 111.

FP 113 Firefighting Skills III 4.00 Studies advanced fire fighting skills and applies these skills during weekly drill activities. Equipment and procedures learned in FF Skills I & II are utilized in an operational format. Students function as a firefighter, apparatus operator, company officer, and training officer during drill activities. Prerequisite: FP 111, 112.

FP 121 Fire Behavior and Combustion 3.00 Course explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. There will be an emphasis on compartment fire behavior. Recommend: MTH 65.

FP 122 Fundamentals of Fire Prevention 3.00 Studies fundamentals of fire inspection standards and techniques of evaluation, identification of hazards and making practical recommendations. Students study fire prevention and education programs and conduct presentations.

FP 123 Hazardous Materials Awareness and Operations 3.00 Designed to prepare individuals to safely respond to hazardous materials emergencies. Individuals will learn to analyze an incident; detect the presence of hazardous materials; survey the scene; collect hazard information from the DOT Emergency Response Guidebook; implement actions consistent with standard operating procedures; initiate protective actions and initiate the notification process.

FP 131 Introduction to High Angle Rescue 0.50 Studies practical procedures, techniques, and safety procedures utilized by rescue personnel during rope rescue. Covers organization of a rope rescue team, equipment, requirements, scene evaluation, and rescue safety will be covered. Practices basic rappel, relay and victim retrieval techniques.

FP 132 Fire App/Pump Construction Operation and Hydraulics 3.00 Studies practical procedures, techniques, and safety precautions utilized during apparatus operations. Covers engine capabilities, pump construction, procedures for operation and hydraulic formulas utilized to calculate flow requirements. Prerequisite: FP 111.

FP 133 Wildland Firefighter 3.00 Trains students in the basic skills required for wildland firefighting. Students will study wildland fire behavior, fire control tactics, human factors on the fireline, standards for fire fighter safety & survival and receive an introduction to the incident command system.

FP 141 Introduction Water Rescue 0.50 Studies practical procedures, techniques, and safety precautions utilized by rescue personnel during water rescue response. Practices organization of a water rescue team, equipment requirements, scene evaluation, rescuer drown-proofing and basic victim retrieval techniques.

FP 151 Aircraft Crash and Rescue Basics 3.00 Covers special needs of responders to aircraft crashes and inflight emergencies. Includes definitions of terrorism, history of terrorists, incidents which may have been caused by terrorists. Includes burning characteristics of various cultures, ethnic groups and non-traditional populations as employed by and encountered by the fire service and other emergency service professions. Audit available.

FP 152 Emergency Response to Terrorism 2.00 Covers special needs of responders to incidents which may have been caused by terrorists. Includes definitions of terrorism, history of terrorists, suspicious circumstances, agents utilized by terrorists, self-protection, crime scene considerations, and special command issues.

FP 161 Vehicle Extrication Basics 0.50 Studies procedures utilized for extrication of injured victims from motor vehicles, tools, equipment and hazards associated with vehicle extrication and safety considerations during rescue operations.

FP 200 Fire Service Hydraulics & Water Supply 3.00 Covers practical procedures, techniques, and safety precautions used while operating fire apparatus. Includes fire apparatus inspection and preventive maintenance, driving laws and policies specific to fire apparatus operators, maneuver a vehicle, and apparatus positioning. Corequisite: FP 232. Prerequisites: FP 112, MTH 95.

FP 201 Emergency Service Rescue 4.00 Studies a variety of procedures, equipment, and tools utilized by emergency rescue personnel. Become familiar with building search, auto extrication, aircraft crash, high angle, and water rescue. Prerequisite: FP 111.

FP 202 Fixed Systems and Extinguishers 3.00 Studies portable extinguisher equipment, fire alarm and detection systems, sprinkler systems and standpipes, protection systems for special hazards, explosion release, ventilation systems, inert atmospheres and static bonding. Prerequisite: FP 111.

FP 203A Intro to Firefighting Tactics & Strategy 3.00 Studies fireground tactics and strategy, responses and size-up, protection of exposures, containment, extinguishment, the command post, combined operations, analysis and post-mortem evaluation, pre-fire surveys and planning. Prerequisite: FP 111.

FP 208 Emergency Operations Safety & Survival 2.00 Prepares students to initiate rapid intervention, emergency procedures and self rescue tactics; identify and avoid potentially dangerous conditions, predict the potential for unexpected and unusually extreme conditions during emergency operations on the fire ground and other emergency incidents. Prerequisite: FP 111 Prerequisite/Concurrent: FP 201 Audit available.

FP 210 Multicultural Strategies for Firefighters 3.00 Provides familiarization with communication styles, customs, language and behavior patterns of various cultures, ethnic groups and non-traditional populations as employed by and encountered by the fire service and other emergency service professions. Audit available.

FP 211 Building Construction for Firefighters 3.00 Offers knowledge and skills in the various construction features of buildings. Includes structural features affecting fire spread and building collapse, the effect of fire on materials, fire stops and ratings. Use of blueprints and plans to understand building features and pre-fire planning emphasized. Prerequisite: FP 111.

FP 212 Fire Investigation (Cause Determination) 3.00 Studies burning characteristics of combustibles. Interprets clues and burn patterns leading to point of origin. Identifies incendiary indications, sources of ignition and materials ignited and how to preserve the fire scene evidence. Prerequisite: FP 111.

FP 213 Principles of Supervision for Firefighters 3.00 Introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include
risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue.

FP 215 Urban Interface Fire Operations 3.00 Studies strategies for fire attack, action plans, tactics, structural triage, action plan assessment, public relations and safety precautions used in wildland fires during urban interface operations. Practices the sizing up and operational procedures required to operate as initial command on urban interface fires. Prerequisite: FP 133.

FP 231 Aircraft Crash Rescue Practices 3.00 Studies current techniques of aircraft firefighting and rescue, principles associated with aircraft design and mock situations involving varieties of aircraft disasters. Prerequisite: FP 111.

FP 232 Fire Apparatus Driver/Operator II 2.00 Covers practical procedures, techniques, and safety precautions used during apparatus operations. Includes the history and development of fire apparatus capabilities, pump construction, procedures for operation and hydraulic formulas used to calculate flow requirements. Knowledge and skills acquired during classroom instruction will be applied in drill ground operations. Prerequisite: FP 200.

FP 233 Aerial Ladder Operations for Firefighters 3.00 Studies the concepts of aerial ladder operation and becomes familiar with equipment used in construction, operation and maintenance. Situations involving field use, deployment and operation of equipment are explored. Prerequisite: FP 132.

FP 240 Emergency Services Instructor I 3.00 Designed to meet NFPA Standard 1041; Fire and Emergency Services Instructor I. Students will organize classroom, laboratory and outdoor learning environments and present prepared lessons utilizing recognized methods of instruction. Learn to adjust and modify presentations based on student learning styles and changing classroom environments and learn about course objectives and learning outcomes.

FP 241 Flammable, Explosive and Toxic Materials 3.00 Studies electrical exotic metal fires and space age fuel fires; how to handle radioactive materials involved in fire, the use of monitoring equipment and personnel safety practices. Prerequisite: FP 123.

FP 243 Laws Affecting Fire Fighting 1.00 Covers various federal, state and local statutes, codes and ordinances that have a bearing on firefighters. Personal and organizational responsibilities will be covered. Equal employment opportunity, operation of emergency vehicles and fire codes are included.

FP 245 Fire Department Budgets 1.00 Covers the budgeting process as required by Oregon law, including types of budgets, budgeting process, and classification of expenditures. Prerequisite: FP 112. Audit available.

FP 248 Public Relations Information and Education I 1.00 Introduces a basic overview of public relations, information and fire education which fall within a company officer’s responsibility. Prerequisite: FP 122.

FP 250 Emergency Services Instructor II 3.00 Designed to meet NFPA Standard 1041; Fire and Emergency Services Instructor II. Learn to manage instructional resources, staff, facilities, records and reports; develop instructional materials; conduct specialized and advanced training; develop evaluation instruments to support instruction and the evaluation of test results. Prerequisite: FP 240 or equivalent.

FP 252 High Angle Rescue I 3.00 Offers knowledge and skills to select, maintain, inspect and use basic high angle rescue equipment. Hands-on experience helps the student develop confidence in high angle rescue techniques, an appreciation for safety considerations used and provides a good foundation for continuation training. Prerequisite: FP 201.

FP 260 Emergency Services Instructor III 3.00 Learn to administer agency policies and procedures for the management of instructional resources, staff, facilities, records and reports; plan, develop and implement comprehensive fire training programs and curriculum; develop evaluation plans, collect, analyze and report data and utilize data for program validation and student feedback. Prerequisites: FP 240 and 250 or equivalent.

FP 262 Water Rescue for Emergency Services 3.00 Studies practical procedures, techniques, and safety precautions utilized by rescue personnel during water rescue response. Covers organization of a water rescue team, equipment requirements, scene evaluation and rescue drown-proofing will be covered. Victim retrieval, rescue swimming and search techniques will be practiced. Prerequisite: FP 201.

FP 270 Fire Officer I 4.00 Includes first level supervisory functions associated with human resource management, community and government relations, fire administration, inspection and investigation, emergency service delivery, and health and safety. Meets NFPA 1021. Prerequisites: FP 112 or Fire Fighter II certification. Audit available.

FP 271 Fire Officer II 4.00 Includes second level supervisory functions associated with human resource management, community and government relations, fire administration, inspection and investigation, emergency service delivery, and health and safety. Meets NFPA 1021, Chapter 5, Fire Officer II. Prerequisite: FP 270 or equivalent.

FP 280A Cooperative Education: Fire Science 3.00 Field placement in a municipal fire department as a fire intern, volunteer firefighter or cadet/explorer. Students are evaluated by a PCC field representative from Cooperative Education. Department permission required.

FP 280B Cooperative Education: Fire Science - Seminar 2.00 Department permission required.

FP 283 Public Sector Employment Workshop (Fire) 3.00 Provides the opportunity to develop skills needed to successfully complete Civil Service and Public Sector employment examinations.

FP 293 Advanced Firefighting Tactics & Strategy 1.00 Studies response and size-up, fire-ground tactics and analysis, post-mortem, pre-fire survey and planning, combined operations, mutual aid, disaster planning and problems in unusual fire operations. Prerequisite: FP 203A.

FP 294 Incident Command 2.00 Covers incident command systems and how to improve fireground operational techniques through a structured process. Prerequisite: FP 112 or ICS-200. Audit available.

FP 295 Major Emergency Tactics/Strategy 3.00 Covers response and size-up, fire-ground tactics and analysis, post-mortem, pre-fire survey and planning, combined operations, mutual aid, disaster planning and problems in unusual fire operations. Prerequisite: FP 203A. Audit available.

FP 9010 Fire Management Practices 1.00 Outlines basic management skills for the mid-level manager. Includes organizational structure, communicating, financial management and controlling resources. Prerequisite: FP 213.

FP 9030 Planning Fire Protection 1.00 Covers the elements that are considered when planning for fire protection needs of a community. The techniques of risk analysis and problem solving are used. Prerequisite: FP 213. Audit available.

FP 9040 Managing Fire Personnel 1.00 Covers the appointment/promotional process to include desirable traits of personnel. Discusses motivation and counseling as well as the legal responsibilities of management and utilization of employees. Prerequisite: FP 213. Audit available.

FP 9060 Fire Science II Chemistry 3.00 Studies physical and chemical properties of substances, chemical changes, elements, compounds, gases, chemical combinations, weights and measurements, as well as theories of metals, acids, bases, salts, solvents, solutions and emulsions. Prerequisite: MTH 60. Audit available.

FP 9070 Major Emergency Tactics/Strategy 3.00 Studies response and size-up, fire-ground tactics and analysis, post-mortem, pre-fire survey and planning, combined operations, mutual aid, disaster planning and problems in unusual fire operations. Audit available.

FP 9080 Fire Fighting Safety & Survival
for Company Officers 1.00 Covers safety on the fireground, equipment, the officer’s role in modifying behavior and identifying hazardous situations. Identifies state safety rules. Audit available.

FR 9110 First Year French 4.00 Continues the work of FR 101. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of FR 101 or instructor permission. Audit available.

FR 101 First Year French 4.00 Emphasizes active communication in beginning French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Audit available.

FR 102 First Year French 4.00 Continues the work of FR 101. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of FR 101 or instructor permission. Audit available.

FR 103 First Year French 4.00 Continues the work of FR 102. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of FR 102 or instructor permission. Audit available.

FR 111A First Year French Conversation 3.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 111B First Year French Conversation 2.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 111C First Year French Conversation 1.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 111D First Year French Conversation 1.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 112A First Year French Conversation 3.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 112B First Year French Conversation 2.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 112C First Year French Conversation 2.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 112D First Year French Conversation 1.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 113A First Year French Conversation 3.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 103 or 151 or instructor permission. Audit available.

FR 113B First Year French Conversation 2.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 103 or 151 or instructor permission. Audit available.

FR 113C First Year French Conversation 1.00 Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 103 or 151 or instructor permission. Audit available.

FR 150 First Year French 6.00 Emphasizes active communication in beginning French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of FR 150-151 is equivalent to FR 101-102-103. Audit available.

FR 151 First Year French 6.00 Continues the work of FR 150. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of FR 150 or instructor permission. Completion of FR 150-151 is equivalent to FR 101-102-103. Audit available.

FR 201 Second Year French 4.00 Continues the work of first year French, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year French at college level or instructor permission. Audit available.

FR 202 Second Year French 4.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of FR 201 or instructor permission. Audit available.

FR 203 Second Year French 4.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of FR 202 or instructor permission. Audit available.

FR 211A Intermediate French Conversation 3.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 201, 250, or instructor permission. Audit available.

FR 211B Intermediate French Conversation 2.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 201, 250, or instructor permission. Audit available.

FR 211C Intermediate French Conversation 1.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 201, 250, or instructor permission. Audit available.

FR 212A Intermediate French Conversation 3.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 202, 250, or instructor permission. Audit available.

FR 212B Intermediate French Conversation 2.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 202, 250, or instructor permission. Audit available.

FR 212C Intermediate French Conversation 1.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 202, 250, or instructor permission. Audit available.
COURSE DESCRIPTIONS

FR 213A Intermediate French Conversation 3.00 Stress conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 203, 251, or instructor permission. Audit available.

FR 213B Intermediate French Conversation 2.00 Stress conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 203, 251, or instructor permission. Audit available.

FR 213C Intermediate French Conversation 1.00 Stress conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 203, 251, or instructor permission. Audit available.

FR 250 Second Year French 6.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year French at college level or instructor permission. Completion of FR 200-201 is equivalent to FR 201-202-203. Audit available.

FR 251 Second Year French 6.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of FR 200 or instructor permission. Completion of FR 250-251 is equivalent to FR 201-202-203. Audit available.

FR 255 Accelerated French 8.00 For beginners. Covers the material of FR 101 and FR 102 in an accelerated format. Stresses the development of listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on the student’s active use of the language. Recommended to the highly motivated student. Proficiency target level: Intermediate high; the successful student will be able to handle most uncomplicated communicative tasks and social situations. Recommended: Completion of FR 200 or FR 256 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 260A French Culture 3.00 Studies and discusses contemporary thought and life of the French speaking world. Recommended: Completion of one term of second year French at the college level or instructor permission. Audit available.

FR 260B French Culture 2.00 Studies and discusses contemporary thought and life of the French speaking world. Recommended: Completion of one term of second year French at the college level or instructor permission. Audit available.

FR 260C French Culture 1.00 Study and discussion of contemporary thought and life of the French speaking world. Recommended: Completion of one term of second year French at the college level or instructor permission. Audit available.

FR 261A French Culture 3.00 Continuation of FR 260A. Recommended: Completion of two terms of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 261B French Culture 2.00 Continuation of FR 260B. Recommended: Completion of two terms of second year French at the college level or instructor permission. Audit available.

FR 261C French Culture 1.00 Continuation of FR 260C. Recommended: Completion of two terms of second year French at the college level or instructor permission. Audit available.

FR 262A French Culture 3.00 Continuation of FR 261A. Recommended: Completion of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 262B French Culture 2.00 Continuation of FR 261B. Recommended: Completion of second year French at the college level or instructor permission. Audit available.

FR 262C French Culture 1.00 Continuation of FR 261C. Recommended: Completion of second year French at the college level or instructor permission. Audit available.

FR 270A Readings in French Literature (Women Writers) 3.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257, or instructor permission. Audit available.

FR 270B Readings in French Literature 2.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257, or instructor permission. Audit available.

FR 270C Readings in French Literature 1.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257, or instructor permission. Audit available.

FR 271A Readings in French Literature (African & Caribbean) 3.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by African and Caribbean writers. Fulfills diversity requirement for AAOT degree. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251, or 257, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 271B Readings in French Literature (African & Caribbean) 2.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by African and Caribbean writers. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251, or 257, or instructor permission. Audit available.

FR 271C Readings in French Literature (African & Caribbean) 1.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by African and Caribbean writers. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251, or 257, or instructor permission. Audit available.

FR 272A Readings in French Literature (Women Writers) 3.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by women. Fulfills diversity requirement for AAOT degree. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257, or instructor permission. Audit available.

FR 272B Readings in French Literature (Women Writers) 2.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by women. Recommended: Completion of second year French at
the college level, simultaneous enrollment in FR 203, FR 251 or FR 257; or instructor permission. Audit available.

FR 272C Readings in French Literature (Women Writers) 1.00 Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by women. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, FR 251 or FR 257; or instructor permission. Audit available.

FR 290A French Speaking and Writing 3.00 Expands and perfects skills learned in second year French. Emphasizes speaking and writing, but students also practice listening and reading. Recommended: Successful completion of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 290B French Composition 2.00 Practice in developing composition skills. Recommended: Instructor permission and either second year college French with grades of A or B or native or near native ability in French. Audit available.

FR 290C French Composition 1.00 Practice in developing composition skills. Recommended: Instructor permission and successful completion of either second year college French with grades of A or B or native or near native ability in French. Audit available.

FR 291A French Composition 3.00 Practice in developing composition skills. Recommended: Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 291B French Composition 2.00 Continuation of FR 290B. Recommended: Instructor permission. Audit available.

FR 291C French Composition 1.00 Continuation of FR 290C. Recommended: Instructor permission. Audit available.

FR 292A French Composition 3.00 Continuation of FR 291A. Recommended: Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 292B French Composition 2.00 Continuation of FR 291B. Recommended: Instructor permission. Audit available.

FR 292C French Composition 1.00 Continuation of FR 291C. Recommended: Instructor permission. Audit available.

FITNESS TECHNOLOGY

FT 101 Fitness Technology Seminar 3.00 Explores careers in the fitness and health industry. Practical experience and insight into the role of a fitness/health professional in health and fitness clubs and community based wellness centers, including self-promotion. Practical knowledge and skill in teaching psychomotor movement. Concepts, skills, and methodology required in becoming a successful instructor of movement. Prerequisite: MTH 65, WR 121, and current Fitness Technology student or instructor approval. Audit available.

FT 102 Injury Prevention & Management 3.00 Covers information and knowledge concerning prevention and rehabilitation of athletics/sports/fitness injuries. Emphasis on preventing injuries by reducing risks for injury or illness, creating safe environments, ensuring proper fit and use of sporting equipment, and implementing emergency action plans. Students who satisfactorily complete the requirements will be eligible for first responder certifications (i.e. CPR, first aid, etc.). Audit available.

FT 103 Nutrition for Fitness Instructors 3.00 Explores basic principles of nutrition with an emphasis on application to fitness, weight management and athletic performance. Prerequisites: HPE 295, WR 121 and MTH 65. Audit available.

FT 104 Fitness Assessment & Programming I 3.00 Introduces fitness testing for apparently healthy populations. Covers cardiovascular fitness, muscular strength and endurance, flexibility, and body composition in both individual and group assessments. Prerequisites: HPE 295 and FT 131. Audit available.

FT 105 Fitness Assessment & Programming II 3.00 Introduces individual and group exercise plan development and progression for cardiorespiratory, muscular strength/endurance, flexibility/balance, body composition and fitness/balance, body composition and fitness/sport performance. Prerequisites: FT 104. Audit available.

FT 106 Analysis of Movement 3.00 Examines human motion in physical activity and sport and the integration of anatomy and biomechanics. Explores the anatomical movements involved in a wide variety of motor and balance tasks, postural stability exercises, and overall exercise program design. Prerequisite: FT 131. Audit available.

FT 107 Exercise Science I 3.00 Investigates physiological mechanisms responsible for adaptations to acute and chronic exercise in the metabolic, endocrine, pulmonary, cardiovascular, and neuromuscular systems. Prerequisite: FT 131. Audit available.

FT 131 Structure & Function of the Human Body 4.00 Presents basic principles in anatomy, physiology, and exercise science. Introduces terminology, concepts, basic chemistry, cell structure and function, tissues and the following systems: metabolic, cardiovascular, pulmonary, skeletal, muscular, endocrine, and nervous. Interpret and apply the fundamental concepts of human anatomy and physiology. Prerequisite: MTH 65, WR 121, and current Fitness Technology student or instructor approval. Audit available.

FT 201 Fitness Assessment and Program III 3.00 Explores the needs and abilities of individuals outside of ACSM’s guidelines for apparently healthy populations. Emphasis is on modification of movement, exercise, equipment, and assessments for these individuals/groups. Includes advanced testing procedures, modification of assessments, and modified exercise programming for these individuals/groups. Prerequisite: FT 105. Audit available.

FT 202 Fitness and Aging 3.00 Explores physiological aspects of aging as applied to fitness and exercise. Prerequisites: HPE 295 and FT 131, or instructor approval. Audit available.

FT 203 Fitness Promotion 3.00 Covers skills that promote healthy and fit lifestyles to both individuals and groups in a variety of fitness disciplines. Introduces skills to promote success in the job market. Prerequisite: FT 280 or instructor approval. Audit available.

FT 204 Exercise Science II 3.00 Continues application of physiological concepts from Exercise Science I. Introduces concepts of environmental conditions, advanced training adaptations, and clinical exercise physiology. Includes additional time in the lab setting learning metabolic and ECG stress testing. Prerequisite: FT 104 and FT 107, or instructor approval. Audit available.

FT 280 Cooperative Education: Fitness Technology Provides required practicum experiences for Fitness Technology majors. Required: 3rd term standing; current First Aid and CPR/AED certifications, and instructor permission. Audit available.

GEOLOGY

G 160 Geology: Oregon Coast 2.00 Designed to introduce the relationships between the biology and geology of the Oregon Coast.

G 161 Geology: Malheur Region 2.00 This field trip experience is designed to introduce the relationships between the biology and geology of the Malheur geographical area.

G 200 Field Studies Introduces basic concepts in geology through field experience. Includes both lecture and field components. Content varies based on site location. Students may repeat for credit with different sites. Prerequisite/concurrent: G 201 or G202 or G203 or G5106 or instructor permission.

G 201 Physical Geology 4.00 Introduces physical geology which deals with minerals, rocks, internal structure of the earth and plate tectonics. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available.

G 202 Physical Geology 4.00 Introduces physical geology which deals with mass wasting, streams, glaciers, deserts, beaches, groundwater, and use of topographic maps. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available.
**COURSE DESCRIPTIONS**

**G 203 Historical Geology 4.00** Introduces historical geology which deals with geologic time, fossils, stratigraphic principles, and the geologic history of the North American continent. Includes weekly lab. G201 or G202 or GS106 strongly recommended. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores.

**G 207 Geology of the Pacific Northwest 3.00** Introduces the regional geology of the Pacific Northwest with emphasis on Oregon geology. Includes basic geologic principles, earth materials and geology of Pacific Northwest provinces. Prior geology experience strongly recommended. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

**G 208 Volcanoes and Their Activity 3.00** Covers the origin, activity, products, classification and hazards of volcanoes. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

**G 209 Earthquakes 3.00** Covers the nature and origin of earthquakes, the characteristics of seismic waves, how earthquakes are measured, the hazards of earthquakes and the historical and geological record of earthquakes. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

**G 291 Elements of Rocks and Minerals 4.00** Introduces the study of rocks and minerals that includes their classification, origin and identification. Recommended for persons interested in rock and mineral collecting, mining and prospecting. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available.

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**GRAPHIC DESIGN**

**GD 101 Macintosh for Graphic Designers 1.00** Course covers current Macintosh operating system computer fundamentals and techniques used to increase efficiency and productivity for professional Graphic Designers. Topics include an in-depth study of system desktop features, search and navigation, advanced file management, font organization and essential shortcuts specific to the Graphic Design industry. Required course for Graphic Design majors. Prerequisite: Placement into GD 121.

**GD 114 Introductory Typography 3.00** Designed to introduce type as a design element. This non-computer course emphasizes understanding the cultural significance of letterforms through hand-rendering. Focuses on interaction of letterforms from single letters through multiple words. Includes font classification, composition and production techniques. Required for entry into the Graphic Design program.

**GD 116 Intermediate Typography 3.00** Continues the study of type as a design element. Concentration on typographic composition, hierarchy, type identification and typographic systems. Traditional and digital methods of production will be used. Student required to use some page layout software and output outside of class. Prerequisites: GD 101, GD 114, GD 120. Prerequisite/concurrent: GD 140.

**GD 120 Graphic Design I 3.00** Introduces the basic concepts of graphic design, including design elements and principles. Emphasizes the design process, developing an idea from thumbnail sketch, through tight roughs, to a comprehensive design. Focuses on the importance of presentation, industry standards and professional tools and techniques. Required for entry into the Graphic Design program.

**GD 122 Graphic Design 2 3.00** Builds on the basic concepts of graphic design. Emphasizes color, including color theory, vocabulary, color schemes, and the effects of color. Focuses on identifying graphic styles, brainstorming techniques, and introduces 3-dimensional design. Attention placed on design process, presentation, and industry standards. Prerequisites: GD 101, GD 114, GD 120 Prerequisite/concurrent: GD 140 and/or GD 150.

**GD 124 Graphic Design 3 3.00** Third in a series of six graphic design courses. Builds on basic concepts of graphic design. Emphasizes research, identifying specific graphic design needs for a business, symbol design, and maintaining continuity while working with multiple colors, sizes and materials. Studies in-depth the relationships of type, layout and color in two- and three-dimensional graphic design projects. Prerequisites: GD 122, GD 140, GD 150. Prerequisite/concurrent: GD 141, GD 151.

**GD 140 Digital Page Design 1 3.00** Explores beginning level graphic design and publishing using professional page layout software. Introduces typography design, basic page layout, computer file management, professional methods of design organization, keyboard work and the foundations of computer use in single-page layouts. To be taken sequentially. Placement permission slip required. Prerequisites: GD 101, GD 114 and GD 120. Prerequisite/concurrent: GD 122.

**GD 141 Digital Page Design 2 3.00** Covers layout and design of multi-page printed documents. Includes interative page elements, prepress and output, file management and industry-standard design processes. Department permission required. Prerequisite: GD 140.

**GD 150 Digital Illustration 13.00** Explores the basic tools and techniques of Adobe Illustrator and its use in creating appropriate solutions to graphic design problems. To be taken sequentially. Placement permission slip required. Prerequisites: GD 101, GD 114, and GD 120. Prerequisite/concurrent: GD 122.

**GD 151 Digital Illustration 2 3.00** Explores advanced tools and techniques of Adobe Illustrator, and its use in creating solutions to complex graphic design problems. Placement permission slip required. Prerequisite: GD 150. Prerequisite/concurrent: GD 160.

**GD 160 Digital Imaging I 3.00** Using professional software to explore digital image editing, photo manipulation and layer compositing. File formats, techniques and tools most used by graphic designers are emphasized. Placement permission slip required. Prerequisite/concurrent: GD 141 and/or ART 151.

**GD 170 Photoshop and Design Basics 2.00** Introductory Photoshop tools and techniques combined with basic design and composition principles. Ideal for learning digital photo page layout and design. Macintosh experience highly recommended. Audit available.

**GD 221 Graphic Design 4 3.00** Focuses on publication design. Single-page and multiple-page projects will emphasize hierarchy, eyeball, structure and organization. Projects, lessons and exercises are intended to be done on first-year skills in typography and design using professional page layout software. Advanced computer production techniques build on previous coursework. Required: Second-year standing in the Graphic Design program.

**GD 222 Graphic Design 5 3.00** Explore branding, logo design and identity systems. Research target audience and create design solutions to communicate client and product image through logos, logotypes, icons, and symbols. Advanced computer production techniques build on previous coursework. Required: Second-year standing in the Graphic Design program. Prerequisite: GD 221.

**GD 228 Professional Graphic Design Practices 3.00** Prepare self-promotion resume packages, visit graphics businesses and research industry insights from guest speakers. Offered to second-year, graduating Graphic Design students intending to seek employment in the industry. Prerequisites: GD 221, Prerequisite/concurrent: GD 222, GD 242, GD 260, GD 244.

**GD 229 Portfolio Preparation 3.00** Develop a professional portfolio comprised of design work that may be revised, redone or created. Define employment goals and participate in practice interviews and critiques. Offered to second-year, graduating Graphic Design students intending to seek employment in the industry. Prerequisite: GD 228.

**GD 239 Illustration for Graphic Designers 3.00** Covers basic spot illustration techniques used by graphic designers in print and web. Emphasizes generating illustration from photo references. Color, and black and white illustrations include technical as well as technology-enhanced techniques. Production issues focus on the illustration’s eventual placement in the computer environment. Prerequisites: GD 124, GD 140 and ART 131.

**GD 242 Combined Graphic Programs 3.00** Create graphic elements in multiple programs and explore importing, exporting and assembling in other programs. Advanced techniques are used to study
cross-application issues. Required: second year standing in the Graphic Design program. Prerequisites: GD 141, GD 151, GD 221. Prerequisite/concurrent: GD 260.

**GD 244 Preparing Files for Print 3.00**

Presents the production processes which follow the design phase. From correctly preparing design in the digital environment for successful printing on commercial presses. The business roles of the designer, the printer and the service bureau will be covered. Prerequisite/concurrent: GD 221.

**GD 249 Design Studio 3.00**

Explore graphic design theory in actual client-directed projects. Course is set up to simulate a working design studio providing the opportunity to experience the requirements and roles of a designer in the field, as well as the administrative tasks. Emphasizes client communication and professional practices. Acceptable substitution: GD 280A Cooperative Work Experience: Graphic Design. Required: Second year standing in the Graphic Design program. Prerequisite/concurrent: GD 221, GD 244.

**GD 260 Digital Imaging 2 3.00**

Introduces advanced techniques in color correction and image manipulation for print and web-based graphics. The study of masks, channels and advanced selection methods will be incorporated in professional-level design projects. Export formats and cross-application issues are covered. Required: Second year standing in the Graphic Design program. Prerequisite: GD 160.

**GD 280A Cooperative Education: Graphic Design**

Cooperative on-the-job experience allowing for the application and development of knowledge and skills acquired in the on-campus program. Variable credits: Receive one credit for every 40 hours of successful work experience. Department permission required.

**GEOGRAPHY**

**GEO 105 Introduction to Human Geography 4.00**

Introduces key geographic themes of location, place, region, human-environment interaction, and mobility. Includes an examination of spatial patterns of topics such as language, religion, culture, population, cooperation and conflict, natural resources, migration, and political organization. All of these are addressed at varying scales and with respect to their influence on the global landscape. Special attention is given to current issues and events. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 106 Geography of the Developed World 4.00**

An examination of world regions with developed industrial and service economies, including Europe, the United States, Canada, the former Soviet Union, Japan, Australia, and New Zealand. Topics include spatial patterns of economic development, resource use, international trade, population and migration, transportation, and urban landscapes. Each region is analyzed as part of the larger global community, with a specific emphasis on current issues and trends. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 107 Geography of the Developing World 4.00**

An examination of world regions, including non-western cultures, with an undeveloped or developing industrial base including lower standards of living. Particular attention is given to Asia, Central and South America, and Africa. Topics include the spatial patterns of agriculture, industrial development, resource use, population and migration, religious and political conflict, and cultural landscapes. Each region is analyzed as part of the larger global community, with a specific emphasis on current issues and trends. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 204 Geography of Middle East 4.00**

Examines the impacts of different physical and cultural factors in formation, development, and distribution patterns of human settlements, and studies the influence of religious beliefs as well as other cultural elements in the evolution of human landscapes and the quality of life within the region. Study the Middle East as a culturally diverse region (i.e. not a monolith) and learn about the dominant value systems held by different Middle Eastern societies. Among issues discussed in class are population issues, urbanization processes, traditionalism, modernity, male-female relations, feminism, democracy, and westernization. Audit available.

**GEO 206 Geography of Oregon 4.00**

Explores the various historical, social, economic, physical, and geographic factors that have contributed to the modern Oregon landscape. Delineates the major cultural and physical divisions within Oregon, in order to better illustrate the state’s significant diversity. Emphasis on current issues and trends, and the growth of Oregon is placed into context with regional and national growth patterns. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 208 Physical Geography: Weather and Climate 4.00**

Examines the processes of the atmosphere, the distribution and character of climate types, climate change and human kind as a modifier of climate. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 210 The Natural Environment 4.00**

Focuses on natural processes that create physical diversity on the earth. Includes weather and climate, vegetation, soils, landforms, ecosystems, their distribution and significance. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 211 Field Geography: The Local Landscape 4.00**

Works with a community organization using field research methods in human geography and application of GIS to prepare cartographic presentations of community needs and resources. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 212 Field Geography: GIS 4.00**

Provides a conceptual overview and hands-on experience using the ArcGIS software. Includes introduction to GIS, data conversions, building a GIS database, and creating maps from GIS data. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 223 Field Geography: GPS & GIS 4.00**

Provides a conceptual overview and hands-on experience with Global Positioning Systems (GPS). Includes GPS theory, techniques, and field data methods. Uses hand-held GPS units, to collect and integrate spatial and non-spatial data within a Geographic Information System (GIS) framework. Covers differential correction, importing features and tabular data into GIS, data conversions, building a GIS database, and creating maps from GPS data. Prerequisite/Concurrent: GEO 265. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 230 Geography of Race & Ethnic Conflicts 4.00**

Examines the issues of race and ethnicity and their interrelationships with contemporary global patterns of political factionalism, economic disparity, religious fervor and ethnic nationalism. Examines the real issues and their processes of development for various countries (developed and developing) throughout the world. Audit available.

**GEO 235 Geography of the Former Soviet Union 4.00**

Examines the issues and trends of the former Soviet Union. Special emphasis on the region’s historical geography and on its political, cultural and demographic ramifications to explain its problems and the changes now occurring in the region. Audit available.

**GEO 241 Geography of the Developing World 4.00**

Provides an understanding of the geographical perspectives: physical and cultural landscapes, people, natural resources, economic activities, regions, and political divisions of Africa south of the Sahara or Sub-Saharan Africa. Special emphasis on the region’s historical geography and on its political, cultural and demographic ramifications to explain its problems and the changes now occurring in the region. Audit available.

**GEO 242 Geography of the Developing World 4.00**

Examines world regions with developing economies, including Latin America, the Caribbean, and Africa. Topics include spatial patterns of economic development, resource use, international trade, population and migration, transportation, and urban landscapes. Each region is analyzed as part of the larger global community, with a specific emphasis on current issues and trends. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 248 Introduction to GIS 4.00**

Examines the processes of the atmosphere, the distribution and character of climate types, climate change and human kind as a modifier of climate. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 250 Geography of Africa 3.00**

Provides an understanding of the geographical perspectives: physical and cultural landscapes, people, natural resources, economic activities, regions, and political divisions of Africa south of the Sahara or Sub-Saharan Africa. Special emphasis on the region’s historical geography and on its political, cultural and demographic ramifications to explain its problems and the changes now occurring in the region. Audit available.

**GEO 251 Introduction to GIS (Geographical Information Systems) 4.00**

Provides a conceptual overview and hands-on experience using ArcView GIS software. Introduces basic principles of maps and map design and uses ArcView GIS to create, edit, display, query and analyze geographic and tabular data and create maps and charts. An introduction to GPS is included. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 254 Spatial Analysis 4.00**

Provides an overview of the concepts and methods of spatial data analysis. Emphasizes the role of GIS and its application in solving problems. Includes spatial data management, spatial modeling, spatial analysis and visualization. Prerequisite: GE 265. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 256 Maps & Geospatial Concepts 4.00**

Introduces principles and concepts needed to understand the use and interpretation of maps, geographic information systems & science. Includes: reference systems, coordinate systems, map projections, types of maps, geographic data, scale, data visualization, and map interpretation. Serves as the foundation for the GIS course sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 260 Field Geography: GIS 4.00**

Provides a conceptual overview and hands-on experience using ArcGIS software. Includes introduction to GIS, data conversions, building a GIS database, and creating maps from GIS data. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**GEO 266 GIS Analysis 4.00**

Introduces advanced overview of ArcGIS software and introduces extensions to the main ArcMap interface. Topics include preparing data for analysis, creating and managing databases, geocoding, creating and editing spatial data, and analyzing data using the Spatial Analyst and 3D Analyst extensions. Prerequisite: GEO 265; or instructor permission. Audit available.

**GEO 267 Application Topics in Geograph-**
ic Information Systems 4.00 Application focus varies and provides an opportunity for extended exposure to one or more of the analytical techniques first learned in prerequisite courses. Attention to institutional and professional GIS application issues and programming environments. Prerequisite: GEO 266; or instructor permission. Audit available.

GEO 280A CE: Geography Enables students to extend their knowledge of Geography through work in settings which provide learning experiences that are not available in the classroom, but which supplement classroom learning. Under the employer’s supervision the student learns to apply classroom theory to actual work situations. Department permission required. Audit available.

GEO 280B CE: Geography - Seminar 1.00 Provides a forum in which to discuss work experiences with peers and instructor. Department permission required. Audit available.

GEO 298 Independent Study: Geography 3.00 Offers individualized study at an advanced level in areas of geography not considered in other courses to meet special interests or program requirements. Students complete a term project and readings approved by the instructor. Recommended: prior study of geography. Audit available.

GERMAN

GER 101 First Year German 4.00 Emphasizes active communication in beginning German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Audit available.

GER 102 First Year German 4.00 Continues the work of GER 101. Emphasizes active communication in German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of GER 101 or instructor permission. Audit available.

GER 103 First Year German 4.00 Continues the work of GER 102. Emphasizes active communication in German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of GER 102 or instructor permission. Audit available.

GER 111A First Year German Conversation 3.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 101 or 150; or instructor permission. Audit available.

GER 111B First Year German Conversation 2.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 101 or 150; or instructor permission. Audit available.

GER 111C First Year German Conversation 1.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 101 or 150; or instructor permission. Audit available.

GER 112A First Year German Conversation 3.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 102 or 151; or instructor permission. Audit available.

GER 112B First Year German Conversation 2.00 Practice of structures and German vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 102 or 151; or instructor permission. Audit available.

GER 112C First Year German Conversation 1.00 Practice of structures and German vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 102 or 151; or instructor permission. Audit available.

GER 113A First Year German Conversation 3.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 113B First Year German Conversation 2.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 113C First Year German Conversation 1.00 Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 150 First Year German 6.00 Emphasizes active communication in beginning German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of GER 150-151 is equivalent to GER 101-102-103. Audit available.

GER 151 First Year German 6.00 Continues the work of GER 150. Emphasizes active communication in German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of GER 150 or instructor permission. Completion of GER 150-151 is equivalent to GER 101-102-103. Audit available.

GER 201 Second Year German 4.00 Continues the work of first year German, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year German at college level or instructor permission. Audit available.

GER 202 Second Year German 4.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of GER 201 or instructor permission. Audit available.

GER 203 Second Year German 4.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of GER 202 or instructor permission. Audit available.

GER 211A Intermediate German Conversation 3.00 Stresses conversational skills at the second year level. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.

GER 211B Intermediate German Conversation 2.00 Stresses conversational skills at the second year level. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.

GER 211C Intermediate German Conversation 1.00 Stresses conversational skills at the second year level. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.

GER 212A Intermediate German Conversation 3.00 Stresses conversational skills at the second year level. Continues the work of GER 212A. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212B Intermediate German Conversation 2.00 Stresses conversational skills at the second year level. Continues the work of GER 212B. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212C Intermediate German Conversation 1.00 Stresses conversational skills at the second year level. Continues the work of GER 212C. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212A Intermediate German Conversation 3.00 Stresses conversational skills at the second year level. Continues the work of GER 212A. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212B Intermediate German Conversation 2.00 Stresses conversational skills at the second year level. Continues the work of GER 212B. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212C Intermediate German Conversation 1.00 Stresses conversational skills at the second year level. Continues the work of GER 212C. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.
GER 260A German Culture Through Film 3.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in seven German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, Germany during the Second World War, economic, social and historical perspectives in post-war Germany, roles of German men and women, self-discovery, German humor, East versus West. Course conducted in English and all films with English subtitles. Students may take only one course in the 261 series: A, B, or C. Audit available.

GER 260B German Culture Through Film 2.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in five German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, Germany during the Second World War, economic, social and historical perspectives in post-war Germany, roles of German men and women, self-discovery, German humor, East versus West. Course conducted in English and all films with English subtitles. Students may take only one course in the 260 series: A, B, or C. Audit available.

GER 260C German Culture Through Film 1.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in four German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, Germany during the Second World War, economic, social and historical perspectives in post-war Germany, roles of German men and women, self-discovery, German humor, East versus West. Course conducted in English and all films with English subtitles. Students may take only one course in the 260 series: A, B, or C. Audit available.

GER 261A German Culture Through Film 3.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in five German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, the New German Cinema, morality of the bourgeoisie, alienation of youth, roles of German men and women, self-discovery, moral disaster of the Nazi legacy, authority and rebellion. Course conducted in English and all films with English subtitles. Students may take only one course in the 261 series: A, B, or C. Audit available.

GER 261C German Culture Through Film 1.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in four German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, the New German Cinema, morality of the bourgeoisie, alienation of youth, roles of German men and women, self-discovery, moral disaster of the Nazi legacy, authority and rebellion. Course conducted in English and all films with English subtitles. Students may take only one course in the 261 series: A, B, or C. Audit available.

GER 262A German Culture Through Film 3.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in seven German films. May explore issues including but not limited to: love as a medium for representing changing ideas in Germany, East vs. West, personal and national identity struggles, foreigners in Germany, stereotypes, roles of women in German society. Course conducted in English and all films with English subtitles. Students may take only one course in the 262 series: A, B, or C. Audit available.

GER 262B German Culture Through Film 2.00 Enhances understanding of German culture and contemporary social issues presented in five German films. May explore issues including but not limited to: love as a medium for representing changing ideas in Germany, East vs. West, personal and national identity struggles, foreigners in Germany, stereotypes, roles of women in German society. Course conducted in English and all films with English subtitles. Students may take only one course in the 262 series: A, B, or C. Audit available.

GER 262C German Culture Through Film 1.00 Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in four German films. May explore issues including but not limited to: love as a medium for representing changing ideas in Germany, East vs. West, personal and national identity struggles, foreigners in Germany, stereotypes, roles of women in German society. Course conducted in English and all films with English subtitles. Students may take only one course in the 262 series: A, B, or C. Audit available.

GRN 131 Hospice Basics 1.00 Provides an introduction to hospice and hospice care, including the hospice philosophy, palliative care, pain and symptom management, death and the dying process, grief and bereavement. Also addresses hospice eligibility, ethics and confidentiality, interdisciplinary team roles, communication, advanced directives, care-giving issues, self-care, and alternative therapies.

GRN 165 Activity Director Training 2.00 Course prepares students to manage an activity department; do assessments and documentation; design, schedule, and implement appropriately designed activity programs; foster healthy resident and family dynamics; facilitate resident council meetings; and manage personnel and resources. Audit available.

GRN 166 Therapeutic Horticulture in Health and Human Services 1.00 An overview of therapeutic horticulture activity in a wide variety of senior services including senior centers, in-home, day programs, retirement facilities, assisted living, skilled nursing, long-term care nursing, dementia units, hospice, continuing care retirement communities, corrections and more. Audit available.

GRN 170 Resident Assistant I Training 2.00 Provides direct care workers in Assisted Living Facilities the knowledge and skills for both entry and performance levels as a Resident Assistant I, as described by the occupational profiles for that position. The modular, work-based training is designed to establish person-centered care competency levels in the areas of team roles and responsibilities, infection control, service plans, safety, physical effects of aging, and medications. Audit available.

GRN 171 Resident Assistant II Training 1.00 Provides advanced direct care workers in Assisted Living Facilities the knowledge and skills for both entry and performance levels as a Resident Assistant II, as described by the occupational profile for that position. The modular, work-based training is designed to establish person-centered care competency levels in the areas of team roles and responsibilities, infection control, service plans, safety, physical effects of aging, and medications, as well as the medication administration, liaison, supervisory and reporting responsibilities of the Resident Assistant II position. Prerequisite/concurrent: GRN 170. Audit available.

GRN 172 Adult Care Home Training 2.00 Includes the issues prospective operators and resident managers of Adult Care Home (ACH) will face providing care and services to residents who live in adult care homes. The course uses State of Oregon Adult Care Home Program curriculum and includes demonstrations and practice in the social model of care giving. Audit available.

GRN 175 The Mature Mind 1.00 Explores the convergence of gerontology and recent brain science. Presents novel and combinatorial interventions based on recent research on aging brains for today’s older students and tomorrow’s gerontologists and care providers, introducing them to the emerging array of sustainable practices.
approaches to engage, stimulate, and enhance older minds. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GRN 181 Exploring the Field of Aging 2.00 Introduces the range of emerging professional opportunities in the field of aging, and guides students to explore and identify potential career pathways. Course work includes career and market research, coaching from course instructor, self-assessment, reflection, fieldwork, informational interviews and other activities to identify potential internships, entry level positions, and educational and training opportunities fitting the student’s goals and trends in the field. Audit available.

GRN 233 Supporting End of Life 4.00 Provides health care workers, caregivers, religious and spiritual counselors, social workers, fiduciaries, and family members the knowledge and skills to support the end of life process with dying persons and their families. Explores the physical, emotional, spiritual, legal, and financial aspects of dying, as well as grief and bereavement. Audit available.

GRN 235 Introduction to Dementia Care 2.00 Focuses on issues related to the care of older adults presenting behavioral and cognitive challenges, using a person-centered, person-directed approach. Introduces students to assessment, treatment and care of persons experiencing dementia, problematic mental health conditions, and the dying process. Recommend: WR 115 and RD 115. Audit available.

GRN 236 Dementia Care Practice 2.00 Uses a case study approach to advanced behavioral and cognitive care issues, based on realistic scenarios in a variety of settings. Includes assessing appropriate long term care options for memory care, problem solving, functional levels and other challenges, managing surveys, responding to deficiencies, problem solving repetitive incident reports, implementing fall prevention programs, and developing family education and support programs. Prerequisite: GRN 235. Audit available.

GRN 237 End of Life Therapies 1.00 Focuses on a specific therapeutic approach appropriate for end of life care and explores a variety of therapeutic strategies and activities designed to augment end of life and palliative care goals and enhance the quality of life for the dying person and their caregivers. Each course offering will focus on one therapeutic approach, such as art, music, pet, horticulture, and massage therapies. May be taken 3 times for credit. Audit available.

GRN 240 Care and Service Coordination 3.00 Provides an overview of professional standards, responsibilities, and skills required for care managers, information and resource specialists, advocates, and service coordinators working with older adults, persons with disabilities, and their families. Includes the assessment process, care planning, resource management, service provider and financial coordination, documentation and accountability, ethics and confidentiality, advocacy, and evaluation. Introduces strength-based, person-centered, and empowerment models. Audit available.

GRN 245 Introduction to Guardianship in Oregon 1.00 Introduces guardianship in Oregon. Includes a review of the court process, who qualifies for guardianship, and responsibilities of individuals serving as guardians. Presents basic information about how to be a guardian for a family member, and an overview of resources for guardians. Audit available.

GRN 246 Guardian Conservator Training 2.00 Introduces professional guardianship and conservatorship in Oregon. Includes professional standards and practices, intake decision-making, working with attorneys through the court process, interactions between Oregon laws and professional standards, business and social service skills required and legal/ethical responsibilities to the court and protected person throughout the process. Introduces national and state issues, and how to work with a care team in a professional social service, medical, and legal context. Focuses on how to coordinate services and finances, how to use available resources, and how to work with physicians, care providers, social service agencies, families and other parties in decision-making on life, property, and care for court-determined incapacitated adults in Oregon. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/concurrent: GRN 245. Audit available.

GRN 247 Exploring HSO 3.00 Provides didactic and experiential learning to prepare for an advanced practice professional career with older adults in long term care facilities, adult daycare and community settings. Includes overview of the activity profession, late-life human development and health, standards of practice, activity planning for quality of life in a person-centered care model, and methods of service delivery for diverse populations. Students must have completed GRN 165 or the 36 CEU state- certification Activity Director Training course. Audit available.

GRN 248 Introduction to Professional Therapeutic Horticulture 2.00 Introductory course for students training for the horticultural therapy profession and for health and human service providers desiring to add therapeutic horticulture to the treatment milieu. Topics include: history and development of the profession; code of ethics; people-plant relationship research base; vocational, social wellness and therapeutic program models; overview of basic clinical skills; aspects of interdisciplinary collaboration/integration in healthcare delivery; medical terminology; volunteer program development; professional resources and horticulture skills development for therapy. Audit available.

GRN 258 Techniques & Adaptive Strategies in Therapeutic Horticulture 2.00 Prepares students to design, develop, and maintain wellness activities and therapeutic horticulture gardens and programs incorporating indoor, outdoor and seasonal adaptations, strategies, and techniques. Includes a focus on special needs populations in retirement and long term care communities, vocational and medical rehabilitation facilities, and developmental disabilities settings. Students must have completed GRN 267 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 267. Audit available.

GRN 269 Therapeutic Horticulture Skills I 2.00 Introduces therapeutic skills, including therapeutic models, medical terminology, assessment, goal setting, task analysis treatment issues, activity planning, documentation and evaluation, safety and precautions as applied in a therapeutic horticulture milieu. Professional and therapeutic skill topics include learning styles, motivational management, group dynamics, therapeutic use of self, listening skills, public speaking, counseling basics, roles in interdisciplinary team, leadership role of the therapist, writing and communication skills, and ethics. Students must have completed GRN 268 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 268. Audit available.

GRN 269 Therapeutic Horticulture Skills II 2.00 Builds therapeutic and professional skills to work in pediatric, geriatric, developmental disabilities, psychiatric and offender programs. Includes advanced skills in designing and evaluating 12 month therapeutic activities and programming for frail elderly, pediatrics, developmentally disabled, neurologically impaired and other special needs populations. Focuses on professional skill mastery and continuing education.
COURSE DESCRIPTIONS

Maintenance & Programming 3.00
GRN 272 Therapeutic Garden Design, Maintenance & Programming 3.00 Focuses on the design, maintenance and programming of natural and horticultural therapeutic gardens. Includes working with an interdisciplinary team, garden assessment using therapeutic gardening standards, designing restorative settings, planning and conducting group and seasonal sessions, sensory goals programming for dementia clients patio and strolling gardens for assisted living facility programs, and special needs gardens. Students must have completed GRN 271 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 271. Audit available.

GRN 270 Therapeutic Garden Design, 270. Audit available.

or the equivalent course offered through the Legacy planning. Students must have completed GRN 270 development of the universe, earth as a planet, earth's Surveys astronomy to include historical de -

GS 107 Physical Science (Astronomy) 4.00 Surveys astronomy to include historical development of the universe, earth as a planet, earth’s moon, planets of the solar system, the sun, stars and galaxies. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

GS 106 Physical Science (Geology) 4.00 Covers minerals, rocks, volcanism, earthquakes, plate tectonics, erosion and deposition by wind, glaciers and streams, weathering, fossils and geologic history. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

GS 108 Physical Science (Oceanography) 4.00 Includes the chemical, biological, physical and geological nature of the oceans. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

GS 109 Physical Science (Meteorology) 4.00 Covers characteristics of our atmosphere, air pressure and winds, atmospheric moisture, large air masses, violent storms, the effect of oceans on weather, and climates. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available.

HE 112 First Aid and Emergency Care 1.00 Describes emergency procedures and techniques of basic life support for adult, child, or infant victims of airway obstruction, respiratory arrest and/or cardiac arrest. Provides education and training in Automated External Defibrillator. Upon successful completion of this course, students may earn an American Red Cross CPR/AED for the Professional Rescuer and Healthcare Provider certificate or equivalent American Health Association. Recommend: RD 115 or equivalent placement test scores. Audit available.

HE 113 First Aid & CPR/AED Professional Rescuers/HealthCare Providers 1.00 Introduces basic first aid knowledge in the home, work, and community environment. Gain knowledge and skills to perform Professional CPR and AED for adults/children/infants. Upon successful completion of this course, students may apply for an American Red Cross First Aid card and American Red Cross Professional CPR/AED card. Recommend: RD 115 or equivalent placement test scores. Audit available.

HE 125 First Aid & Industrial Safety 3.00 Presents an overview of industrial safety procedures, accident prevention, material safety data sheets (MSDS), hazardous materials, first aid, and CPR/AED. Upon successful completion of this course, students may earn an American Red Cross Responding to Emergency First Aid and Adult CPR/AED certificate and Blood Borne Pathogens Training: Preventing Disease Transmission Certificate or American Heart Association equivalent. Recommend: RD 115 or equivalent placement test scores. Audit available.

HE 207 Seminar in Biomedical, Behavioral and Health Sciences 1.00 Introduces an interdisciplinary, science-based overview of key issues and current research in scientific fields of study related to biomedical, behavioral, and health sciences through class meetings and off-campus professional seminars sponsored by academic and research institutions throughout the Portland metropolitan area. Recommended: WR 121. Audit available.

HE 212 Women's Health 4.00 Examines women's health issues from a local, national and international perspective exploring the impact of bio-psycho-socio-cultural factors on the diagnosis, treatment, prevention and promotion of women's health. Audit available.

HE 213 Men's Health 4.00 Examines general and specific men's health issues such as heart disease, prostate disorders, impotence and sexual dysfunction, HIV disease, human relationships and accidents/violence from a holistic wellness perspective. Audit available.

HE 242 Stress and Human Health 4.00 Surveys and critically analyzes the stress concept and its impact on individual health. Using a multi-dimensional model, students will explore their personal stressors and the interaction between stress, human health and disease. Recommended: WR 121 Audit available.

HE 250 Personal Health 3.00 Explores current general health issues in emotional health and stress, physical fitness, nutrition, human sexuality, communicable and degenerative diseases and drugs from a wellness perspective. Audit available.

HE 251 Community and Public Health Issues 4.00 Inquires into the causes and potential solutions for current community health issues, overviews the organization of community and health care agencies, and explores career opportunities in community health. Includes Service Learning. Audit available.

HE 252 First Aid - Basics and Beyond 4.00 Introduces first aid and emergency knowledge and skills in the work, community, and home environment. Examines first aid care in remote and/or wilderness settings. Upon successful completion of this course, students may earn an ARC Responding to Emergencies First Aid Certificate, Wilderness and Remote First Aid Certificate, and CPR/AED Adult/Child, Infant CPR Certificate. Recommend: RD 115 or equivalent placement test scores. Audit available.

HE 254 Weight Management and Personal Health 3.00 Course examines the causes of obesity, its impact on human health and explores weight loss and diet options for the individual from a holistic perspective, including social, emotional, and physical dimensions of human health. Recommended: Students have a WR 121 skill level. Audit available.
HE 255 Film and Public Health 4.00 Critically explores public health issues as they are portrayed in popular films and discusses the scientific and social underpinnings of the public health issues. Recommended: WR 121 Audit available.

HE 262 Children’s Health, Nutrition & Safety 3.00 Explores current health and safety issues for infants and young children. Issues examined include childhood illnesses and ailments, nutrition, obesity, stress, safe environment, self-esteem and general first aid. Audit available.

HE 264 Health, Food Systems, and the Environment 3.00 This course will examine how food systems influence human and environmental health. Students will explore the connections between sustainable agriculture concepts/practices, food systems, and personal and environmental health. Audit available.

HE 278 Human Health and the Environment 3.00 Examines the relationship between the environment and human health. Focuses on issues such as persistent environmental contaminants, environmental toxins, chemical exposures, climate change and accompanying disease outbreaks. Includes a strong emphasis on personal decision making. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HEC 157 Parenting Skills 1.00 Designed for parents or prospective parents to examine the current issues affecting the role of parents in today’s society. Studies the stages of child development, influences parents have on their child’s development and how those influences can shape their child’s development over time. Audit available.

HEC 201 Family Partnerships in Education 3.00 The study of influences on children and their families which impact child and family behaviors, values, attitudes, beliefs, and morals. Topics include: parenting patterns: cultural, religious and socioeconomic influences; peer, school, media, impacts; family development, community ecology, special needs children, prejudice, and public policy. Audit available.

HEC 226 Child Development 4.00 Basic theories, research and principles of physical, cognitive, language, social and emotional development of children from the prenatal period through adolescence. Includes observation and classroom processes. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HEC 280A Cooperative Education: Consumer and Family Studies Offers hands-on skill in planned, supervised and regularly evaluated experiences at appropriate work sites. Each cooperative education placement site is planned to meet the student’s individual and specific skill needs. Department permission required. Audit available.

HEC 9421 Living and Learning with Your Toddler 1.00 Designed for parents and their children between the walking stage and two and one-half years of age. Parents observe and participate with their children in developmentally designed activities. In addition, they participate in a parent seminar focusing on parenting topics and needs. Audit available.

**HEALTH INFORMATION MANAGEMENT**

HIM 105 Ancillary Information Analysis 3.00 Develops knowledge of health care ancillary services, laboratory tests, and imaging services. English communication skills necessary. Audit available.

HIM 110 Health Information Technology 1 4.00 Introduces the concept of health information management and health informatics including the components of content, use of the structure of healthcare data along with information keeping practices in both paper and electronic systems. Corequisites: HIM 120. Prerequisites: Placement into RD 90, WR 90, MTH 20. Audit available.

HIM 120 Health Information Technology 1 Lab 1.00 Laboratory course for HIM 110 Health Information Technology 1 and allows students to practice the skills and knowledge learned in that course. Corequisite: HIM 110.

HIM 121 Legal and Ethical Aspects of Healthcare 3.00 Overview of the legal system and the legal principles that govern the delivery of healthcare. Covers patient confidentiality and the disclosure of patient information. Discusses codes of ethics and bioethical issues facing today’s healthcare professionals. English communication skills necessary. Audit available.

HIM 128 Anatomy & Physiology for Health Information Management 1 4.00 Provides the conceptual framework, factual knowledge and analytical skills needed to pursue a career in health information management. Surveys anatomical terminology, basic chemistry, cell structure and function, tissues, and the following systems: integumentary, skeletal, muscular, and nervous. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HIM 129 Anatomy & Physiology for Health Information Management 2 4.00 Provides the conceptual framework, factual knowledge and analytical skills needed to pursue a career in health information management. Surveys the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive, urinary, and some coverage of human development, human genetics, and immunology. Prerequisites: HIM 128; WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HIM 131 Medical Science 5.00 Concepts of disease processes as they relate to the normal physiology of the major body systems. Audit available.

HIM 136 Medications 3.00 Covers appropriate drug uses, effects, dangers, and precautions; routes of administration. Review common prescription abbreviations, forms of medications and basic drug categories. Audit available.

HIM 141 Health Information Technology 2 3.00 Continues the concepts of health information management covered in Health Information Management 1 including components of the content, use and structure of non-hospital healthcare data. Audit available.

HIM 182 Health Care Delivery Systems 3.00 Explains the past, present, and future influences on the delivery of health care. Covers provider organizations and settings in health care, financing of health care, causes and characteristics of health care utilization in the United States, regulation and monitoring of health care systems and ethical issues associated with health care technology. Audit available.

HIM 270 ICD-10-CM Basic Coding 4.00 Covers classification of diseases and current reimbursement systems utilizing ICD-10-CM. Prerequisite: HIM 131. Audit available.

HIM 271 Quality Improvement in Healthcare 3.00 Covers medical staff organization, physician credentialing, and quality improvement techniques in the healthcare setting. Audit available.

HIM 272 Health Information Management 3.00 Principles of personnel supervision and management of a health information department. Audit available.

HIM 273 Intermediate ICD-10-CM/PCS 4.00 Builds upon the basics skills sets learned in HIM 270. Provides continued skills development for ICD-10 coding of diagnostic and procedural statements utilizing applications of coding and reporting standards. Prerequisite: HIM 270. Audit available.

HIM 274 Quality Improvement in Healthcare Lab 1.00 Corequisite: HIM 271.

HIM 275 Classification Systems 3 3.00 Introduces coding and classification systems for outpatient procedures and ambulatory care facilities. Prerequisite: HIM 105, 107, 110, 120, 131, 182, MP 111, and (BI 122 or BI 233 or HIM 129). Audit available.

HIM 276 Intermediate ICD-10-CM/PCS Lab 2.00 Includes the application of skills and knowledge learned in HIM 273 utilizing case-summary coding exercises. Corequisite: HIM 273.

HIM 277 Health Information Management Lab 2.00 Develop proficiencies in the skills included in HIM 272. Corequisite: HIM 272.
COURSE DESCRIPTIONS

HIM 281 Data Management & Analysis 1 3.00 Collection, retrieval, analysis, and quality review of administrative and clinical information and data. Audit available.

HIM 282 Data Management & Analysis 2 3.00 Statistical analysis and presentation of administrative and clinical information and data. Prerequisite: HIM 281. Audit available.

HIM 283 Health Information Systems 4.00 Introduces the history and current status of information systems in health care: information architectures, administrative and clinical applications, evidence-based medicine, information retrieval, decision support systems, security and confidentiality, bioinformatics, information system cycles, the electronic health record, key health information systems and standards, and medical devices. Teaches strategies and tools to insure the development and/or selection of health information systems. Discusses the role of healthcare information and communication technologies in healthcare delivery including their role in improving the quality, safety and efficiency of healthcare delivery. Audit available.

HIM 285 Healthcare Financing and Compliance 3.00 Provides an understanding of the essential components of financing and compliance in health care facilities. Audit available.

HIM 286 Data Management and Analysis 1 Lab 2.00 Laboratory course for HIM 281. Allows students to practice skills and apply the knowledge learned in Data Management and Analysis 1. Corequisite: HIM 281

HIM 290 Health Information Technology 3 3.00 Examines and develops skills for training healthcare teams, healthcare entities, and consumers on health information. Project management and the management of change in relation to health information management are also covered. Audit available.

HIM 292 Health Information Directed Practice 1 1.00 Work under supervision of facility personnel in local health care facilities. Experience actual working conditions and various aspects of medical records. Department permission required.

HIM 293 Health Information Directed Practice 1.00 Work under supervision of facility personnel in local health care facilities. Experience actual working conditions and various aspects of medical records.

HONORS

HON 101 Introduction to Honors: Scholarly Inquiry 2.00 Guides motivated students into the theory and practice of scholarly reading, researching, writing and presenting academic work. Students will learn to explore the serious questions of our world. The students will begin to build their Honors program portfolio of work. This course should be taken early in the student’s experience and will define a cohort of Honors students. Prepares students to succeed in multiple academic environments. Develops skills required to transfer. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and 3.25 GPA.

HON 201 Capstone Experience 2.00 Culminates Honors Program study. Formalizes development of transfer portfolio. Scaffolds completion of capstone project. Prerequisites: HON 101, WR 122, 16 credits in designated honors courses and 3.25 GPA.

HORTICULTURE

HOR 226 Plant Materials - Deciduous 4.00 Botanical characteristics and field identification. Cultural requirements, pests, diseases, and landscape uses of plants with concentration on deciduous material and plants of Fall interest. Audit available.

HOR 227 Plant Materials - Evergreens 4.00 Botanical characteristics and field identification. Cultural requirements, pests, diseases, and landscape uses of plants with concentration on deciduous material and plants of Winter interest. Audit available.

HOR 228 Plant Materials - Flowering 4.00 Botanical characteristics and field identification. Cultural requirements, pests, diseases, and landscape uses of plants with concentration on flowering plants and plants of Spring interest. Audit available.

HOR 255 Spring Annuals and Perennials 3.00 Identification of Spring herbaceous annuals and perennials most commonly used in landscapes. Care, culture, pests, diseases, propagation and landscape use. Audit available.

HOR 266 Interior Plants 3.00 Identification of interior plants commonly used in interior plantscaping. Cultural requirements, pests, diseases, propagation and interior use covered. Audit available.

HOR 272 Summer Annuals & Perennials 3.00 Identification of summer herbaceous annuals and perennials most commonly used in landscapes. Care, culture, pests, diseases, propagation and landscape use. Audit available.

HOR 290 Introduction to Landscape Design 3.00 Basic steps and elements used in landscape design. Establishment of specific design criteria, field measurements and basic drawing techniques required in production of finished design. Audit available.

HOR 291 Landscape Design Process 3.00 Critical thinking approach to landscape design. Methods of developing use of line, proportion, color, scale and texture in the creation of landscape spaces. Landscape architectural history and sites used as background material. Prerequisites: HOR 226, 227, 228, and 290. Prerequisite/concurrent: LAT 217. Audit available.

HEALTH & PHYSICAL EDUCATION

HPE 295 Health and Fitness for Life 3.00 Explores the interrelationship of the five components of physical fitness, basic nutrition concepts, and stress management activities to increase individual health and wellness. Includes lab sessions, fitness assessments, and fitness program development. Audit available.

CULINARY ASSISTANT

HR 107 Culinary Assistant Training 15.00 Complete individualized vocational training in food services or clerical areas. Classroom sessions cover customer service skills, and developing effective communication and appropriate social skills at work. Audit available.

HR 108 Culinary Assistant Training 15.00 Complete individualized vocational training in food services or clerical areas. Classroom sessions cover career exploration. Topics include: identification of values, interests, skills, and barriers to employment. Audit available.

HR 109 Culinary Assistant Training 15.00 Complete individualized vocational training in food services or clerical areas. Classroom sessions cover job search skills including ADA regulations, identifying accommodations needed for employment, resume writing, developing a portfolio, preparing for interviews, and contacting potential employers. Audit available.

HISTORY

HST 100 Introduction to History 3.00 This course will provide a general introduction to the nature and methods of history. Students will explore how history is reconstructed through the study of various historical sources such as primary documents, secondary accounts, films, posters, art, and more. Prerequisite: Placement into WR 115. Audit available.

HST 101 History of Western Civilization: Ancient to Medieval 4.00 Studies the ancient civilizations of Mesopotamia, Egypt, Greece, and Rome. Covers development of Judeo-Christian beliefs, early Islamic civilization, Byzantine civilization, and early medieval Europe. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.


HST 102 Western Civilization: Medieval to Modern 4.00 Studies the High Middle Ages and early modern Europe, including the Renaissance, Reformation, Scientific Revolution, Enlightenment and the French Revolution. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 102H History of Western Civilization:
COURSE DESCRIPTIONS

HST 201 History of the United States - I
for direct application of learning. Corequisites: HST 201, 202, or 203. Includes 1) a tutorial relating to course concepts and content, 2) academic skill building, and 3) a brief community-related learning project to allow for direct application of learning. Corequisites: HST 201 or HST 202 or HST 203. Audit available.

HST 204 History of Women in the U.S.: Pre-colonial to 1877 4.00 Examines the lives of women in terms of family relations, religion, culture, sexuality and reproduction, and work roles, as well as educational opportunities and social reform activities. Explores diversity in terms of class, race, ethnicity, legal status, and region. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 205 History of Women in the U.S.: 1877 to Present 4.00 Examines women’s work in maturing industrial economy, women’s reform activities, and changing family and social relationships. Explores class, ethnic, racial, and regional diversity. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 206 History of China 4.00 Surveys the history of China. Includes political, diplomatic, economic, social, religious, and cultural themes from pre-history to modern times. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 207 History of Korea and Japan 4.00 Explores the history of Korea and Japan and their dynamic relationship from pre-history to modern times. Includes political, diplomatic, economic, social, religious, and cultural themes. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 208 History of Women, Sex, and the Family 4.00 Examines the historical and cultural variations in family life and sexuality in the 19th and 20th centuries in an international context (including the United States) through topics such as courtship, marriage, reproduction, violence, colonialism, homosexuality, and work. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 218 Native American Indian History 4.00 Covers history of American Indians in what is now the United States from pre-Columbian times to the present, exploring the cultural diversity among Native peoples, tribal sovereignty, conflicts and accommodations with European Americans, historical roots of contemporary Native American issues and an increased level of awareness of the cultural heritage of the United States. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 225 History of Women, Sex, and the Family 4.00 Examines the historical and cultural variations in family life and sexuality in the 19th and 20th centuries in an international context (including the United States) through topics such as courtship, marriage, reproduction, violence, colonialism, homosexuality, and work. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 240 Oregon History 4.00 Examines the rich and diverse history of Oregon including the significance of Oregon’s frontier heritage and Oregon’s role in American history from pre-European contact to the modern era. Explores economic, political, social, and cultural factors in terms of race, ethnicity, gender, class, and religion. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 246 Religion in the United States to 1840 4.00 Covers the basic features and effects of Native American religious revitalization movements, European backgrounds of Christian denominations, development of different religious groups, church-state relations, the struggle for religious liberty and how they shaped the beliefs, behaviors and institutions of colonial America and the early United States. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 270 History of Mexico 4.00 Surveys Mexican history from pre-Columbian to modern times. Focus on post contact history: the Spanish conquest, colonial Mexico, independence and its aftermath to contemporary times. Emphasizes on social, political and cultural developments and contributions by a diversity of Mexico’s peoples. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 271 History of Central America and the Caribbean 4.00 Surveys Central American and Caribbean history from the pre-Columbian era to the present. Focuses on post-contact history including colonialism, independence, revolution, nation-building and international relationships. Emphasizes social, political and cultural developments and contributions by a diversity of Central American and Caribbean peoples. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 274 African-American History - I 4.00 Presents a framework for understanding the Black experience from African origins to the beginning of the Civil War. Includes West African cultures, the Middle Passage, the experiences of free and enslaved African Americans from the colonial through antebellum periods including the abolition movement. Discusses African American agency through churches, political organizations, and social institutions and explore African American culture through literature, art, music, and other cultural forms. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 275 African American History - II 4.00 Examines the broad range of experiences of African Americans from the American Civil War to the 1920s. Explores both the relationship of Blacks to the larger society and the inner dynamic of the black community. Devotes particular attention to Reconstruction, the construction of social, political and economic
COURSE DESCRIPTIONS

An introductory course designed to provide students with an understanding of major themes and issues in the culture and history of the African continent, the course will consider the rise of complex indigenous empires, smaller African societies, agricultural and technological achievements, African state systems, as well as the impact of international trade and Islam on Africa. It will examine colonialism, independence and social, political and cultural contributions of Africa's diverse people to the global enterprise. Recommended: completion of WR 115 with a C or better grade. Audit available.

HST 285 The Holocaust 4.00 Introduces the aftermath of World War I and the rise of the Nazis, the historical roots of anti-Semitism, the evolution of the Final Solution and its coordination in Nazi-occupied Europe, the victims of Nazi policies, the camps, the perpetrators, bystanders, and the aftermath of the Holocaust. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 289A Independent Study: History 2.00 Offers advanced individualized study of history on a specified topic to meet special interests or program requirements. Involves completion of a project and readings on a topic approved by the instructor. May be taken three times for credit. Instructor permission required. Audit available.

HST 289B Independent Study: History 4.00 Offers advanced, individualized study in a substantial area of study to meet special interests or program requirements. Involves completion of a project and readings on a substantial area of study approved by the instructor. May be taken three times for credit. Instructor permission required.

HUM 100 Introduction to Humanities 4.00 Introduces students to college-level study in the humanities; promotes a sense of humanity through such topics as literature, theatre, art, music, architecture, philosophy, and religion by critically thinking about moral values, myths, aesthetics, and liberty; all of this within historical frameworks. It is designed to reawaken our sense of wonder and curiosity about the meaning of life. It shows how the various arts and sciences intersect, influence and are influenced by cultural and historical circumstances. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

HUM 201 Humanities & Technology: Exploring Origins 4.00 Introduces concepts and approaches used in study of humanistic disciplines and surveys visions and perspectives that our culture has inherited from literature, philosophy, theology, visual arts, music, history, and mythology of Western and non-Western traditions. Focuses on selected historical periods and themes. Demonstrates quest for knowledge as a synthetic activity, relating various disciplines, traditions, and historical periods to each other. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HUM 202 Humanities & Technology: Contemporary Issues 4.00 Offers critical examination of the relationship between people and technology. Uses insights derived from a study of the Humanities in conjunction with those from the Social Sciences to inquire into the appropriate use and possible misuse of technology in contemporary society. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HUM 203 Humanities & Technology: Future Directions 4.00 Looks for ways in which technology can be applied in new, socially and ethically responsible forms. Recommended: Courses should be taken sequentially. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HUM 204 History of Africa 4.00 Introduces students to some major themes in the history of the African continent from ancient times to the present. It is the first course in the Humanities sequence on Africa, and provides a wide background for subsequent courses. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HUM 205 African Literature 4.00 Introduces written and oral literature of the African continent, from ancient to modern and from many different geographic regions, cultures and religions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HUM 206 African Art 4.00 Part of three course series. Introduces a variety of art forms from different time periods and geographic areas of the African Continent. Explores how art is influenced by culture, myth, economics, politics, gender, and region. Ability to understand and participate in class discussions required. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HUM 214 Race and Racism 4.00 Introductory examination of the origins and manifestations of the socially constructed concept of race. Critical theory approach is used to analyze the manner in which the concept of race has been developed and interpreted and its influence on the social, economic and political relations between ethnic groups. Emphasis on racist ideas, theories, movements and key people and events in the evolution of race-based thinking. This study includes instances of racism in Eurasia, Africa, the Americas and Australia. Audit available.

HUM 221 Leadership Development 4.00 The primary focus of the course is the development of leadership skills. It provides a basic understanding of leadership principles and group dynamics and helps students develop a personal leadership philosophy and style. The course integrates readings from classic works of literature, contemporary multicultural readings, experiential exercises and films. Issues of diversity, personal growth and interpersonal relationships are explored within the context of leadership development. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.
Creating interior design presentation boards involves using materials such as textiles, furniture, floor coverings, wall and window treatments, and lighting. Prerequisites: ID 131 or ARCH 126 or BCT 229. Audit available.

ID 225 CAD for Kitchen and Bath Design 1.00 Introduces kitchen and bath design software as a drafting tool and its applications to the kitchen and bath planner. Covers the creation, retrieval, and modification of drawings using basic commands. Prerequisites: ID 138, ID 125 or ARCH 126 or BCT 105. Audit available.

ID 230 Textiles for Interiors 3.00 Provides students with knowledge and critical thinking skills required for the identification, selection, usage, and care of textile products. Prerequisite: WR 115 or placement into WR 121. Audit available.

ID 234 Advanced Interiors 3.00 Creative problems in interior design intended to develop an analytical approach to interiors. Based upon individual projects and includes advanced presentation skills. Prerequisites: ID 121, 123, 132, 133, 138; ARCH 101, 111, 124, 127. Prerequisite/concurrent: ID 135. Audit available.

ID 236 Lighting Design 3.00 A study of interior lighting as it relates to residential interiors including terminology, lamps, fixtures, cost factors, developing lighting plans, design techniques and energy saving concerns. Prerequisites: ARCH 110; ID 131 or ARCH 201; Placement into MTH 60 and WR 121. Audit available.

ID 238 Advanced Kitchen and Bath Planning 3.00 Incorporates advanced understanding of design principles and elements to analyze and evaluate functionality and aesthetic principles for residential kitchen and bath planning. Includes Universal Design as it relates to the kitchen and bath and incorporates an advanced understanding of the guidelines as established by the National Kitchen and Bath Association. Prerequisites: ID 138 or ARCH 121 or BCT 229; (ARCH 132 or INSPIRE 151) Prerequisite/concurrent: ID 225. Audit available.

ID 240 Interior Design Internship 3.00 Supervised and educationally directed internship. Weekly lectures relate on-the-job experiences with academic programs. Prerequisites: ID 120, 121, 122, 123, 131, 132, 133, 135, 138, 236; ARCH 101, 111, 124. A “C” grade or better is required in all prerequisites. Audit available.

ID 280A Cooperative Education: Kitchen and Bath Work or observe on approved job sites. Student receives as varied and complete an experience as possible under job conditions. Credits are variable and based on the number of clock hours student spends on job site. Must be coordinated with the supervisor, instructor, and cooperative education specialist. Department permission required. Audit available.

BUILDING INSPECTION TECHNOLOGY

INSPIRE 280B Cooperative Education: Field Experience Work on approved job sites where student will receive as varied and complete an experience as possible under job conditions. Credits are variable and based on the number of clock hours student spends on job site. Must be coordinated with supervisor, instructor, and cooperative education specialist. Department permission required.

ITALIAN

ITAL 101 First Year Italian - First Term 4.00 Beginning communication in Italian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SIGN LANGUAGE INTERPRETATION

ITP 111 American Sign Language I 5.00 Accelerated course designed for interpreting students. Focuses on grammar features, non-manual behaviors and higher language skill development in ASL. Admission into Sign Language Interpretation program and department permission required.

ITP 112 American Sign Language II 5.00 Continues work of ITP 111. An accelerated course designed for interpreting students. Focuses on grammar features, non-manual behaviors and higher language skill development in ASL. Includes wide range of topics. Admission into Sign Language Interpretation program and department permission required.

ITP 113 American Sign Language III 5.00 Continues work of ITP 112. Focuses on additional grammar features, non-manual behaviors, higher language skill development including discourse skill in ASL. Includes wide range of topics. Admission into Sign Language Interpretation program and department permission required.

ITP 120 Fingerspelling I 2.00 Emphasizes increased fingerspelling skill by incorporation into the context of ASL conversation. Introduces some strategies and proper position when fingerspelling. Admission into Sign Language Interpretation program required.

ITP 121 Fingerspelling II 2.00 Continues work of ITP 120. Emphasizes increased fingerspelling skill by incorporation into the context of ASL conversation.
ITP 131 Deaf Culture 4.00 Studies values, social customs, literature, folklore, language, Deaf - hearing interaction, cross-cultural issues and current perspectives of Deaf-World. Admission into Sign Language Interpretation program required. Prerequisite: ASL 130.

ITP 180 Field Experience 1.00 Provides practical experience through observations of professional interpreters. Participation in professional development, Deaf community activities, and contact with Deaf children/adults. Discuss relevant issues through journals and recitation. Criminal background check required. Good standing in Sign Language Interpretation program required. Department permission may be required. Corequisites: ITP 113, ITP 260.

ITP 211 American Sign Language IV 3.00 Continues work of ITP 113. Focuses on more advanced grammar features, non-manual behaviors, language skill development, register continuum, and discourse skill in ASL. Includes wide range of topics. Admission into Sign Language Interpretation program and department permission required.

ITP 212 American Sign Language V 3.00 Continues work of ITP 211. Focuses on more advanced grammar features, non-manual behaviors, language skill development, register continuum, and discourse skill in ASL. Includes wide range of topics. Admission into Sign Language Interpretation program and department permission required.

ITP 230 American Sign Language Linguistics I 3.00 Explores the basic concepts of linguistics as they pertain to ASL structure. Analyzes and discusses phonology, morphology, syntax, semantics, use of language, and sociolinguistic structure of ASL. Examines current research. Admission into Sign Language Interpretation Program and instructor permission required.

ITP 231 American Sign Language Linguistics II 2.00 Continues work of ITP 230. Analyzes and explores additional phonology, morphology, syntax, semantics, variation and historical change of ASL. Analyzes and explores the discourse organization of ASL. Admission into Sign Language Interpretation Program and instructor permission required.

ITP 260 Interpreting Theory I 3.00 Introduces the profession of sign language interpretation, the role and function of an interpreter, the National Registry of Interpreters for the Deaf Code of Ethics, professionalism, the history of the profession, and the basic theories and practices of interpretation. Admission into Sign Language Interpretation Program or department permission required.

ITP 261 Interpreting Theory II: K-12 Education 3.00 Explores the role and functions of interpreters in K-12 classroom. Includes roles and responsibilities of interpreters and other members of the educational team, professionalism, expectations of K-12 interpreters, characteristics of deaf learners, theories of language acquisition, legislation, and technology.

ITP 262 Interpreting Theory III 4.00 Covers special settings and clients, including the following: oral, deaf/blind, minimal language competency, telephone, religious, performing arts, social service, medical, mental health and legal. Freelance practices and national, state, and local certification evaluations are covered. Prerequisite: ITP 260.

ITP 270 Interpreting Process I 4.00 Introduces the interpreting process, beginning with theories of discourse/text analysis and a view of “dynamic equivalency” between source and target languages. Applies principles of text analysis to interpreting from ASL to English and English to ASL. Admission to the Sign Language Interpretation Program or department permission required.

ITP 271 Interpreting Process II 4.00 Continues work on consecutive interpretation from ASL to English and from English to ASL. Department permission may be required. Prerequisite: ITP 270.

ITP 272 Interpreting Process III 4.00 Continues to develop students’ consecutive interpretation skills, and introduces simultaneous interpretation from ASL to English and from English to ASL. Department permission may be required. Prerequisite: ITP 271.

ITP 273 Interpreting Process IV 6.00 Increases simultaneous ASL to English and English to ASL interpreting skills. Focuses on individual areas of needed skill growth. Includes in-and out-of class interpretation practice sessions. Department permission may be required. Prerequisite: ITP 272.

ITP 274 Interpreting Process V 6.00 Increases simultaneous ASL to English and English to ASL interpreting skills. Focuses on individual areas of needed skill growth. Includes in-class interpretation of live presenters, specialized topics and group discussions. Department permission may be required. Prerequisite: ITP 273.

ITP 275 Interpreting Process VI: Interpreting for Children 4.00 Develops interpreting skills specific to working with children in K-12 education. Explores content and activities in K-12 education and adaptation of communication to children’s language and cognitive abilities. Includes informal assessment of children’s language use and tutoring goals and strategies. Analyzes classrooms for interpretability and explores professional development for educational interpreters. Prerequisite: ITP 274 and ITP 261.

ITP 276 Specialized Discourse I 3.00 Introduces Deaf guest speakers (live or on videotape) to talk about wide range of specialized topics in ASL. Explores wide range of topics incorporating the skill to know about and discuss in ASL. Admission into Sign Language Interpretation Program and department permission required.

ITP 277 Specialized Discourse II 3.00 Continues work of ITP 276. Introduces Deaf guest speakers to talk about wide range of specialized topics in ASL. Explores wide range of topics incorporating the skill to know about an discuss in ASL. Admission to the Sign Language Interpretation Program or department permission required.

ITP 279 Mock Interpreting I 1.00 Works with team interpreters to interpret live presenters in class. Applies text analysis to prepare content. Prerequisite: ITP 270. Corequisite: ITP 279.

ITP 281 Mock Interpreting II 2.00 Practices interpreting in ongoing classroom settings where interpreting services are not needed. Develops simultaneous interpreting skills and stamina. Qualifying exam given at end of course to assess readiness to enter ITP 283. Prerequisite: ITP 271. Corequisite: ITP 273.

ITP 283 Interpreting Internship I 3.00 Applies interpreting skills in business, agency, or college settings to gain practical experience assuming the role of a professional interpreter in a structured setting with on-going feedback from professional interpreters acting as mentors. Passing the qualifying exam the term prior to enrollment is required.

ITP 284 Interpreting Internship II 3.00 Applies interpreting skills in educational settings to gain practical experience assuming the role of an educational interpreter in a structured setting with on-going feedback from professional educational interpreters acting as mentors. Passing the qualifying exam the term prior to enrollment or completion of ITP 283 is required.

ITP 285 Deaf Studies Internship 3.00 Students gain practical experience working under the supervision of onsite mentors in an agency that serves deaf people. Prerequisite: Fifth term standing in the Sign Language Interpretation Program or Deaf Studies Program.

J 102 Introduction to Information Gathering 4.00 Surveys methods and strategies for acquiring information for the various mass media. Examines records, databases, sources and interview methods. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

J 103 Introduction to Media Writing 4.00 Introduces the basic process and practice of writing media. Discusses style and structure for print and electronic media and the rights and responsibilities of the public communicator. Emphasizes journalistic style and format, accuracy and clarity in writing. Recommended: Concurrent enrollment in J 102. Prerequisite: WR 121. Audit available.

J 201 Mass Media and Society 4.00 Survey of the various media of mass communication and their
effects on society. Introduces the history and development of mass communication systems and their role in society. Analysis of print and broadcast journalism, advertising, public relations, television and film. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**JPN 101 First Year Japanese 5.00** Introduces Japanese language and culture. Emphasizes effective communicative skills in written and spoken language. Examines the practice, product and perspective of Japanese culture. The first course of a three-course sequence. Audit available.

**JPN 102 First Year Japanese 5.00** Introduces Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Includes the practice, product and perspective of Japanese culture. The second course of a three-course sequence. Prerequisite: JPN 101 or instructor permission. Audit available.

**JPN 103 First Year Japanese 5.00** Continues the introduction of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands the practice, product and perspective of Japanese culture. The third course of a three-course sequence. Prerequisite: JPN 102 or instructor permission. Audit available.

**JPN 111A First Year Japanese Conversation 3.00** Offers a review of and additional practice with structures and vocabulary presented in JPN 101. For beginners. Audit available.

**JPN 111B First Year Japanese Conversation 2.00** Provides practice of structures and vocabulary of first year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 150 or instructor permission. Audit available.

**JPN 111C First Year Japanese Conversation 1.00** Provides extended practice for better understanding of the materials presented in JPN 101. For beginners. Audit available.

**JPN 112A First Year Japanese Conversation 3.00** Offers a review of and additional practice with structures and vocabulary presented in JPN 102. Recommended: Completion of JPN 101 or instructor permission. Audit available.

**JPN 112B First Year Japanese Conversation 2.00** Provides extended practice for better understanding of the materials presented in JPN 151. Recommended: Concurrent enrollment in JPN 151 or instructor permission. Audit available.

**JPN 113A First Year Japanese Conversation 3.00** Offers a review of and additional practice with structures and vocabulary presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission. Audit available.

**JPN 113B First Year Japanese Conversation 1.00** Provides extended practice for better understanding of the materials presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission. Audit available.

**JPN 150 First Year Japanese 6.00** Introduces Japanese language and culture. Emphasizes effective communicative skills in written and spoken language. Examines the practice, product and perspective of Japanese culture. Completion of JPN 150, 151, 111B and 112C is equivalent to JPN 101-102-103. Audit available.

**JPN 151 First Year Japanese 6.00** Continues the introduction of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands the practice, product and perspective of Japanese culture. Completion of JPN 150, 151, 111B and 112C is equivalent to JPN 101-102-103. Prerequisite: JPN 150 or instructor permission. Audit available.

**JPN 201 Second Year Japanese 5.00** Reviews and continues study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Examines new practices, products and perspectives of Japanese culture. The first course of a three-course sequence of second-year Japanese. Prerequisite: JPN 103 or instructor permission. Audit available.

**JPN 202 Second Year Japanese 5.00** Expands study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Adds the new practices, products and perspectives of Japanese culture. The second course of a three-course sequence of second-year Japanese. Prerequisite: JPN 201 or instructor permission. Audit available.

**JPN 203 Second Year Japanese 5.00** Continues study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands practices, products and perspectives of Japanese culture. The third course of a three-course sequence. Prerequisite: JPN 202 or instructor permission. Audit available.
JPN 261C Japanese Culture 1.00
Provides intermediate level students of Japanese with opportunity to increase skills in listening, reading, speaking and vocabulary usage and to gain cultural awareness. Recommended: Completion of JPN 203, 251 or instructor permission or concurrent enrollment in JPN 202. Audit available.

JPN 262A Japanese Culture 3.00
Introduces Japanese traditional and modern culture and society through analysis of cultural, historical and social issues presented in five Japanese films. May explore concepts such as imperialistic past, neo-nationalism, cultural pride, modern social issues, marriage, emigration, forced labor and religions. Course conducted in English. Japanese materials are subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

JPN 262B Japanese Culture 2.00
Japanese Culture through Film. Increases understanding of Japanese traditional and modern culture and society through analysis of cultural, historical and social issues presented in five Japanese films. May explore concepts such as imperialistic past, neo-nationalism, cultural pride, modern social issues, marriage, emigration, forced labor and religions. Course conducted in English. Japanese films will be subtitled in English. Audit available.

JPN 262C Japanese Culture 1.00
Provides intermediate level students of Japanese with opportunity to increase skills in listening, reading, speaking and vocabulary usage and to gain cultural awareness. Recommended: Completion of JPN 203, 251 or instructor permission or concurrent enrollment in JPN 201. Audit available.

JPN 261A Japanese Culture 3.00
Introduces Japanese traditional and modern culture and society through analysis of cultural, historical and social issues presented in five Japanese films. May explore concepts such as self-identity, Japanese views of the West, gender roles, perspectives on death and more. Course conducted in English. Japanese materials are subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

JPN 261B Japanese Culture 2.00
Japanese Culture through Film. Increase understanding of Japanese traditional and modern culture and society through analysis of cultural, historical and social issues presented in five Japanese films. May explore concepts such as self-identity, Japanese views of the West, gender roles, youth and social issues, social groups, social events, perspectives on death, organized crime. Course conducted in English. Japanese films will be subtitled in English. Audit available.

JPN 261C Japanese Culture 1.00
Provides intermediate level students of Japanese with opportunity to increase skills in listening, reading, speaking and vocabulary usage and to gain cultural awareness. Recommended: Completion of JPN 203, 251 or instructor permission or concurrent enrollment in JPN 202. Audit available.

JPN 262A Japanese Culture 3.00
Introduces Japanese traditional and modern culture and society through analysis of cultural, historical and social issues provided by media product and literary work. Explores concepts such as imperialistic past, neo-nationalism, cultural pride, modern social issues, marriage, religions and more. Course conducted in English. Japanese materials are subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

JPN 262B Japanese Culture 2.00
Japanese Culture through Film. Increases understanding of Japanese traditional and modern culture and society through analysis of cultural, historical and social issues presented in five Japanese films. May explore concepts such as imperialistic past, neo-nationalism, cultural pride, modern social issues, marriage, marriages, emigration, forced labor and religions. Course conducted in English. Japanese films will be subtitled in English. Audit available.

JPN 262C Japanese Culture 1.00
Provides intermediate level students of Japanese with opportunity to increase skills in listening, reading, speaking and vocabulary usage and to gain cultural awareness. Recommended: Completion of JPN 203, 251 or instructor permission or concurrent enrollment in JPN 203. Audit available.

JPN 271 Reading in Japanese Literature 3.00
Explores accessible works of Japanese prose and poetry. Emphasizes skills for reading in Japanese. Prerequisite/concurrent: JPN 203 or instructor permission. Audit available.

JPN 272 Reading in Japanese Literature 3.00
Explores accessible works of Japanese prose and poetry. Emphasizes Japanese reading skills. Reading and discussion of accessible works of Japanese prose and poetry. Prerequisite. Second year Japanese at the college level or equivalent instructor permission. Audit available.

JPN 290 Japanese Composition 3.00
Practice in developing composition skills. Prerequisite: Second year Japanese at the college level or equivalent AND instructor permission. Audit available.

JPN 291 Japanese Composition 3.00
Practice in developing composition skills. Prerequisite: Second year Japanese at the college level or equivalent AND instructor permission. Audit available.

LAT 104 Pesticides 3.00
Federal and Oregon pesticide laws, safety, application equipment, types of pesticides and alternatives to pesticides. Recommended basic information for use in preparation for state pesticide certification. Credit is accepted towards recertification of valid Oregon pesticide license. Audit available.

LAT 106 Basic Horticulture 4.00
Botany and biology of plant physiology. Plant growth and reaction to nutrients, light, air, water, pests, and diseases. Audit available.

LAT 108 Landscape Irrigation I 3.00
Materials used, installation, and maintenance for residential and small commercial spray and drip irrigation systems. Applied mathematics used in basic hydraulics and system layout. Students will install sprinkler and drip zones. Audit available.

LAT 109 Plant Propagation 3.00
Covers propagation techniques in hardwood, softwood and conifer cuttings; budding and grafting; layering; division; seed sowing; as well as an overview of propagation facilities, irrigation and pest control. Audit available.

LAT 110 Grounds Maintenance 3.00
Covers operational procedures, materials, safety, tools and equipment. Emphasizes industry standards for scheduling monthly, seasonal, and yearly approach to maintenance operations. Uses hands-on, practical field experience to demonstrate principles. Audit available.

LAT 111 Landscape Construction Practices 3.00
Basic materials, safety and techniques used in the construction of landscapes. Basic tool and hardware identification and use in fences, decks, hardscapes, planters and retaining walls. Hands-on projects in wood, concrete, stone, and modular pavers. Audit available.

LAT 211 Landscape Construction Practices II 3.00
Covers in-depth, the use of tools, equipment, materials (e.g. wood, pavers, stone, concrete) and advanced techniques for the construction and installation of hardcape features. Includes hands-on projects in pathways, wood construction and retaining walls. Recommended: LAT 236. Audit available.

LAT 214 Plant Composition I 3.00
Aspects of plant arrangement in landscape projects with emphasis on plant use, styles of planting, color, texture, form and scale. Prerequisites: HOR 226, 227, 228, 290. Prerequisite/concurrent: LAT 217. Audit available.

LAT 217 Landscape Drafting 3.00
Basic drafting and layout techniques to produce quality design drawings. Drafting equipment, line work, lettering
COURSE DESCRIPTIONS

LAT 219 Landscape Illustration 3.00 Basic principles of graphic presentation for landscape design. Produce perspectives, isometric drawing, botanical drawings and plan renderings. Audit available.

LAT 223 Site Surveying and Analysis 3.00 Application of basic surveying techniques to landscape sites. Topographic maps and land divisions. Techniques for measuring, recording, and interpreting site information needed in the design and construction of landscapes. Prerequisite: LAT 236 or department permission. Audit available.

LAT 224 Grading and Drainage 3.00 Covers the interpretation of design documents to lay out grading and drainage projects. Includes the design and installation of drainage elements per site requirements. Introduces tools and methods for grading landscape sites based on design documents and field measurements. Prerequisites: LAT 223. Audit available.

LAT 225 Water Gardens 3.00 Covers layout and construction of water features. Introduces hands-on techniques for site development, use of liners, equipment and plumbing, placement of rock and plants, and criteria for selection of water plants and fish. Audit available.

LAT 226 Landscape Estimating and Bidding 3.00 Methods and mechanics of estimation. Interpretation of specifications and drawings, material take-offs, labor, equipment, contingency, and overhead calculations, pricing strategies, production rates, bid procedures, recordkeeping, and computer use. Prerequisites: LAT 236, LAT 108, LAT 110, 111; or department permission. Audit available.

LAT 231 Computer Aided Landscape Design 3.00 Site designer software and its use in landscape design. Computer aided design (CAD) techniques needed to produce finished landscape designs, plant lists, and reports. Prerequisites: LAT 217. Audit available.

LAT 232 Landscape Irrigation II 4.00 Information and calculations needed to layout and draw irrigation plans for conventional spray and drip systems. Irrigation controller programming and auditing. Prerequisites: LAT 108, LAT 236; or department permission. Audit available.

LAT 235 Tree Care-Fall 3.00 Principles and practices of modern arboriculture (tree work). Tree biology, basic rope work, climbing with rope and saddle, diseases and pests, and urban forestry issues. Audit available.

LAT 236 Landscape Math 3.00 Upgrade of computational skills required in the landscape industry. Range of topics include business, construction, materials, measurement, water hydraulics, chemicals and fertilizers. Recommended: MTH 60. Prerequisite: MTH 20. Audit available.

LAT 237 Sustainable Landscaping 3.00 Discusses methods used to protect and conserve natural systems and resources within the landscape. Deals with the health of people, plants and the environment and looks a new approaches to landscaping. Recommended: WR 115. Audit available.

LAT 238 Turfgrass Cultural Practices 3.00 Planting and maintenance techniques for specific types of turf, soil preparation, selection and application of fertilizers, equipment use for mowing, thatching, aeration and edging, pest control, and budgeting for costs. Audit available.

LAT 239 Landscape Business Operations 3.00 Requirements for beginning and operating a landscape/horticultural business. Licensing requirements, basic bookkeeping systems, insurance, liability and legal requirements, state regulations, marketing, and promotional ideas. Audit available.

LAT 250 Plant Diseases, Insects and Weed Identification 3.00 Specific identification and controls for diseases, insects, affecting the normal development of horticultural plants. Class accepted for 15 hours of recertification for State of Oregon Pesticide Certification. Audit available.

LAT 252 Oregon Native Plants of Oregon 3.00 Identification of common Native plants of Oregon. Plant communities and their environmental requirements. Adaptation and use of native plants in landscapes. Requirements include Saturday field trips around state for hands-on field identification. Check schedule for dates. Audit available.

LAT 264 Landscape Estimating and Bidding 3.00 Methods and mechanics of estimation. Interpretation of specifications and drawings, material take-offs, labor, equipment, contingency, and overhead calculations, pricing strategies, production rates, bid procedures, recordkeeping, and computer use. Prerequisites: LAT 236, LAT 108, LAT 110, LAT 111; or department permission. Audit available.

LAT 262 Native Plants of Oregon 3.00 Identification of common Native plants of Oregon. Plant communities and their environmental requirements. Adaptation and use of native plants in landscapes. Requirements include Saturday field trips around state for hands-on field identification. Check schedule for dates. Audit available.

LAT 265 Introduction to Clinical Phlebotomy 1.00 Introduces basic venipuncture and skin puncture techniques as well as proper specimen-handling procedures as dictated by the Clinical and Laboratory
Institute Standards (CLS). Prepares and trains to function as an internal member of the ambulatory clinical lab care setting. Department permission required.

MA 121 Medical Legal Aspects 2.00 Introduces the legal system, emphasizing the doctrine of confidential communication, the relationship to the medical record and the disclosure of information. Includes the concepts of professional credentialing and responsibility, liability, and consents and moral issues.

MA 122 Medical Office Assistant Seminar II 1.00 The study of the health care delivery systems, medical office management, interpersonal communications; and coordination of directed practice which includes a review for the national credential examination.

MA 123 Medical Office Clinical Procedures 3.00 Examination room techniques, assisting the physician with examinations, treatment and minor surgery. Covers methods of asepsis and sterilization and the proper care of equipment and supplies. Concurrent enrollment MA 124. Prerequisite: MA 111, BI 55 or 122 or 233; MTH 22A and placement into RD 115 and WR 115.

MA 124 Medical Office Clinical Procedures (Lab) 2.00 Practice and demonstrate proficiency in the procedures in MA 123. Concurrent enrollment in MA 123.

MA 125 Administrative Directed Practice 2.00 Develop proficiency in administrative duties and other office management tasks in a medical clinic/physician office setting. Department permission required.

MA 131 Introduction to Medical Science 5.00 Concepts of disease processes as they relate to the normal physiology of the major body systems. Course specifically designed for students currently enrolled in the Medical Assisting program.

MA 132 Medical Office Assistant Seminar III 1.00 The study of the health care delivery systems, medical office management, interpersonal communications, and coordination of directed practice which includes a review for the national credential examination.

MA 133 Clinical Directed Practice 2.00 Develop proficiency in identification and care of equipment, sterile technique and asepsis, diagnostic and examination procedures, therapy, surgery, medication (pharmacology and administration) and handling of medical emergencies in a medical clinic/physician office setting. Concurrent enrollment in MA 131 and MA 136. Department permission required. Prerequisite: MA 123, 124; MLT 100; MP 104; HE 112.

MA 134 Health Record Transcription (Lab) 1.00 Transcribe medical reports. A proficiency certificate is awarded to students who demonstrate satisfactory transcription speed, accuracy and quality of work. To successfully complete this course students must be able to keyboard 45 words per minute by touch. Prerequisites: MP 111; (BI 55 or 122 or 233).

MA 136 Medications 2.00 Covers appropriate drug uses, effects, dangers, and precautions; routes of administration, dilutions and calculations, management and control. Review common prescription abbreviations, forms of medications and basic drug categories.

MA 147 Specialty Directed Practice 2.00 Practice administrative skills, clinical skills or a combination of both in a medical clinic/physician office setting. Work two four-day, eight hour rotations and attend one six hour seminar at Portland Community College. Prerequisite: MA 125, 133, 134.

MA 180 Coding and Reimbursement 2.00 Introduces coding and reimbursement systems for physician offices and medical clinics.

MA 270 Clinical Practicum 6.00 Practice administrative skills and clinical skills in a medical clinic/physician office setting. Department permission required.

MACHINE MANUFACTURING TECHNOLOGY


MCH 101 Occupational Health and Safety 3.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Introduces the concepts of industrial health and safety regulations, compensation laws, and profitability of safety management. Audit available.

MCH 102 Introduction to Manufacturing 3.00 Technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers an introduction to the manufacturing technology discipline. Prerequisite: MCH 100. Audit available.

MCH 105 Blueprint Reading I 1.50 Covers blueprints using multi-view projection, section & auxiliary views and title blocks & drawing format which are the basis for all graphical communication in industry today. Knowledge of the techniques used on blueprints is necessary in industry whenever descriptions of size, shape, and arrangement are used to produce, service, or sell a product. Introduces blueprints and drawing techniques which will be built upon with further modules in the program. Audit available.

MCH 110 Blueprint Reading II 1.50 Covers dimensions, notes, gears, threads & fasteners which provide the technician with a complete description of size, shape, feature location special tolerances, finish treatments, and assembly instructions are included so that the product can be manufactured, inspected, assembled and tested to exact design specifications, and finishes on part drawings. Introduces the various types of dimensions, tolerances, notes, thread forms, representation, and specifications, finish specifications used in industry today to carry out these functions. Prerequisite: MCH 105. Audit available.

MCH 115 Geometric Dimensioning and Tolerancing 3.50 Covers the use of geometric dimensioning and tolerancing as specified by the American National Standards Institute’s 1982 publication. Introduces the symbols, concepts and basic use of these new techniques for dimensioning and tolerancing used in industry today. Prerequisites: MCH 105,110. Audit available.

MCH 120 Machine Shop Math 2.00 Covers instruction and practice in working with whole numbers, fractions, decimals, formulas, inch and metric systems, formulas, calculating simple and direct indexing. Introduces how to apply the use of the inch/metric systems, dividing/index head and formulas as they pertain to thread calculations, gear calculations, speed and feed calculations, and taper calculations. Prerequisite: MCH 100. Audit available.

MCH 121 Manufacturing Processes I 4.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. An introductory course in material removal operations emphasizing drilling, milling and lathe processes with emphasis on production speeds and feeds. Prerequisite: MCH 102. Audit available.

MCH 123 Sheet Metal Fabrication 4.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. An introductory course in the setup and operation of manual sheet metal machinery. Prerequisite: MCH 100. Audit available.

MCH 125 Speeds and Feeds 1.00 Covers how to calculate proper cutting speeds, revolutions per minute (RPM) and feeds for various machine tools and cutting conditions. Introduces how accurately calculating speeds and feeds prior to cutting on the work piece will save time, money, and avoid the waste of materials and tools. Prerequisite: MCH 100. Audit available.

MCH 130 Machine Shop Trigonometry 2.50 Introduces the rules, methods and procedures for using trigonometry formulas that deal with both the sides and the angles of the right triangle and oblique triangle to solve for the unknown parts. Prerequisite: MCH 100. Audit available.

MCH 135 Basic Measuring Tools 1.50 Covers use and applications associated with basic measuring tools including: the machinist’s scale, dividers, telescoping gage, combination square, hermaphrodite caliper, surface gage, surface finish gage. Introduces the proper techniques and applications of the basic transfer measurement and comparison tools in measuring holes accurately, scribing parallel lines, finding the center of round stock, determining the factors which contribute to the quality of surface finish, and practice in identifying surface finishes. Prerequisite: MCH 100. Audit available.

MCH 145 Layout Tools 1.50 Covers instruction and practice in cutting, filing, layout, scribing, use of
COURSE DESCRIPTIONS

MCH 100 Precision Measuring Tools 1.50
Covers practice and use of precision measuring tools commonly used by the machinist to produce and measure part features. This course introduces the proper use, applications, and parts of the outside, inside, and depth micrometers; the vernier caliper; dial indicators; and the dial bore gage commonly used by the machinist to verify and manufacture part features to print specifications. Prerequisite: MCH 100. Audit available.

MCH 151 Metrology 2.00
Technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Provides an introduction to measurement by mechanical, electronic, and optical methods related to industrial dimensional conformance requirements. Drawing and part compliance methods, including geometric dimensioning and tolerancing verification techniques. Prerequisite: MCH 150. Audit available.

MCH 157 Project Machine Technology I 1.50
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 158 Project Machine Technology II 3.00
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 159 Project Machine Technology III 4.50
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 160 Drilling Machines and Operations 2.00
Covers setup, applications, parts and operation of the sensitive, upright and radial arm drill presses. This course introduces the commonly performed operations of drilling, reaming, counterboring, countersinking, spotfacing and tapping on the various types of drilling machines used to produce parts features to print specifications. Prerequisites: MCH 100, 125, 135. Audit available.

MCH 175 Band Saws 1.00
Covers setup, applications, parts and operation of the vertical, and horizontal band saws and the selection/preparation of band saw blades. Introduces the skill of welding band saw blades and the common cutting operations performed on the vertical/horizontal to manufacture parts to print specifications. Prerequisite: MCH 100. Audit available.

MCH 180 Turning Machines and Operations 4.00
Covers setup, applications, parts and operation of the various types of lathes. Introduces the commonly performed operations of drilling, reaming, counterboring, countersinking, spotfacing, tapping, maintaining/aligning, parallel turning, facing, filing, knurling, grooving, cutting radii, cutting tapers, and parting on the various types of turning machines used to produce parts features to print specifications. Prerequisites: MCH 100, 125. Audit available.

MCH 190 Boring on the Lathe 1.00
Covers setup, applications and operation of boring on the lathe. Introduces the commonly performed operation of boring on the various types of turning machines used to produce parts features to print specifications. Prerequisites: MCH 100, 125, 180. Audit available.

MCH 195 Threading on the Lathe 3.00
Covers setup, applications and operation of single point threading and geometric forming heads for the production of single and multiple lead threads. Introduces cutting, chasing, rolling and forming production of single and multiple lead threads. Also covers cutting, chasing, rolling and forming of internal/external threads on the lathe and drill press by using a single point cutting tool, tap or geometric thread cutting/rolling head on nuts, bolts, fasteners, castings and machined parts to print specifications. Prerequisites: MCH 100, 180, 190. Audit available.

MCH 205 Vertical Milling Machines and Operations 3.50
Covers setup, applications and operation of the vertical milling machine. Introduces the commonly performed operations and uses of a variety of cutters, accessories, indicators, center/edge finder, clamping methods, squaring a block of material on all 6 sides, find the edge of a workpiece, drilling/threading a hole, performing circular cutting operations, using the boring head to bore holes on manufactured parts to print specifications. Prerequisites: MCH 100, 125. Audit available.

MCH 210 Project Machine Technology IV 6.00
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 211 Project Machine Technology V 7.50
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 212 Project Machine Technology VI 9.00
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 213 Project Machine Technology VII 10.50
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 214 Project Machine Technology VIII 12.00
Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 215 Horizontal Milling Machines 2.50
Covers setup, applications and operation of the horizontal milling machine. Introduces how to set-up horizontal milling machine and saw a slot in a piece of steel, use the indexing head to cut keyways and keyseats, use the Dividing Head to cut a gear, the basic function and uses of a jig or fixture to produce machined parts to print specifications. Prerequisites: MCH 100, 125, 205. Audit available.

MCH 216 Mechanical Inspector 4.00
Introduces measurement by mechanical, electronic, and optical methods related to industrial dimensional conformance requirements. Drawing and part compliance methods, including geometric dimensioning and tolerancing techniques. Audit available.

MCH 217 Quality Technician 4.00
Introduces quality management philosophies, strategies for continuous improvement, graphical and numerical methods for data analysis and methods of manufacturing process control. Prerequisite: MCH 216. Audit available.

MCH 220 Manufacturing Processes II 4.00
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers the interaction of design with industrial materials and processes in connection with technical and economic feasibility, trade-offs and automation. Prerequisite: MCH 121. Audit available.

MCH 221 Gears 2.00
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers part drawings with gears which provide the designer with a complete description of size, shape, feature location, special tolerances, finish treatments, and assembly instructions so that the product can be manufactured, inspected, assembled and tested to exact design specifications. Prerequisite: MCH 215. Audit available.

MCH 222 Coordinate Measuring Machine Operation 2.00
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers the roles and types of CMMs; modes of operation; types of probes; CMM software: measuring features; alignments and reverse engineering (digitizing). Prerequisite: MCH 115. Audit available.

MCH 225 Surface Grinding Machines and Operations 2.00
Covers the setup, applications and operation of the horizontal spindle/reciprocating
MCH 227 CNC Grinder Operation 2.50 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. A preparatory course designed to introduce the operation of the Computer Numerical Controlled Surface Grinder including proper setups, uses and operations associated with the CNC surface grinding machine and its accessory devices. Prerequisite: MCH 100. Audit available.

MCH 228 Abrasives 1.50 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers the different types of abrasives available, selection and their applications. Prerequisite: MCH 215. Audit available.

MCH 229 Rapid Prototyping 5.00 Preparatory course designed to introduce the student to the proper setups, uses and operations associated with additive and rapid manufacturing processes including but not limited to the Dimension BST Rapid Prototyping machine and its accessory devices. Prerequisites: MCH 276 or instructor approval. Audit available.

MCH 235 Tool Sharpening 2.00 Covers setup, applications and specifications of tool sharpening/reconditioning utilizing the universal tool and cutter grinder, the drill point and bench grinder. Introduces the sharpening of drill bits, lathe tools, end mill sides/ends, milling cutters, and various formed relieved cutters, reamers and taps to manufacturers specifications. Prerequisite: MCH 100. Audit available.

MCH 240 Cutting Tool Technology 2.00 Covers types, setup, applications and specifications of cutting fluids and cutting tools. Introduces why the selection of the appropriate cutting tools and cutting fluids are essential in metal cutting operations to reduce the heat and friction produced during material removal operations and how the selection, setup and applications affect the quality, accuracy, efficiency and productivity of the workpiece produced. Prerequisite: MCH 100. Audit available.

MCH 245 Metallurgy 2.50 Covers the manufacture, types, heat treatment, testing, machinability, properties and the physics of materials and material removal of ferrous and non-ferrous materials. Introduces the processing of materials to obtain the desired changes in its physical properties, the non-destructive and destructive testing of materials, the machinability of materials and the efficiently/required knowledge of the metal to be cut, but also how the cutting tool material and its shape will perform under various machining conditions. Prerequisite: MCH 100. Audit available.

MCH 246 Metallurgy II 4.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers selection of materials for modern engineering and technology applications; structure and properties of materials starting with fundamental atomic arrangements; microstructural control through thermal and mechanical processing and effects of service environment. Prerequisite: MCH 245. Audit available.

MCH 247 Manufacturing Processes III 3.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Introduces less conventional and non-traditional manufacturing processes and materials. Prerequisite: MCH 220. Audit available.

MCH 248 Metallurgy III 4.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers the selection of materials for modern engineering and technology applications; structure and properties of ceramics, polymers, composites; the materials properties of electrical, thermal, magnetic, and the economic, environmental and societal issues in materials science and engineering. Prerequisite: MCH 246. Audit available.

MCH 259 CNC Programming-Lathe 3.00 Introduces the basic programming skills used with Fanuc (G&M compatible) controlled CNC turning centers. Prerequisites: MCH 100, 110, 125, 130, 160, 205. Audit available.

MCH 260 CNC Conversational Controls 2.00 Covers basics of CNC Conversational Controls. Introduces the student to CNC conversational controls and the flow of CNC conversational programming. Prerequisite: MCH 260, 261. Audit available.

MCH 263 CNC Cycle Time Reduction 1.50 Covers concepts associated with CNC cycle time reduction. Covers proven methods for CNC setup time reduction, and CNC cycle time reduction. Prerequisite: MCH 260, 261. Audit available.

MCH 266 Advanced CNC Programming 3.50 Presented by means of audio visual presentations, demonstrations, lab experiences, and research activities. Emphasizes the development of skills and knowledge competencies prescribed by business and industry performance standards. Prerequisite: MCH 260, 261. Audit available.

MCH 272 Mastercam Level I 5.00 Introduces Mastercam operational basics. Includes terminology relevant to PC-based CAD/CAM work. Covers the use of the Mastercam menu structure and system management. 2 1/2 axis wireframe geometry creation, and toolpath creation for output of CNC "G" code for CNC milling. Audit available.

MCH 273 Mastercam Level II 5.00 Construct advanced geometric models using geometric, free form, and derived surface types. Emphasis on surface creation and mathematical category, applicability, association, Open-GL, shading and curves, C-hooks, terminology and analyzing. All aspects of roughing and finishing are covered with focus on correct application and use of parameters. Includes mill/turn machining conventions, C-axis programming, tool libraries and solid toolpath verification. Audit available.

MCH 276 Mastercam Solids 3.00 A continuation of the CAD/CAM curriculum and explores the solids application of Mastercam as it pertains to model design and toolpath generation. Audit available.

MCH 277 Mastercam CNC/CAM Project 3.00 A continuation of the CAD/CAM curriculum. Purpose of course is to solidify the connection between Mastercam and the CNC Machine through the physical manufacturing of projects. Audit available.

MCH 278 CNC Operation - Mill 4.00 Introduces basic operation and setup skill used with Fanuc (G&M compatible) controlled CNC machining centers. Prerequisite: MCH 268. Audit available.

MCH 279 CNC Operation - Lathe 4.00 Introduces basic operation and setup skill used with Fanuc (G&M compatible) controlled CNC turning centers. Prerequisite: MCH 259. Audit available.

MCH 280 Cooperative Education: Machine Technology This work occurs outside the classroom at a work site performing machine tool setup and operation under the supervision of a professional machinist technician or supervisor. Department permission is required. Offered for one to eight credits based upon the number of clock hours completed at the work site. Audit available.

MCH 282 CNC Router Operation 3.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Introduces the basic operation and setup skill used with Techno (G & M compatible) controlled CNC Routers. Prerequisite: MCH 281. Audit available.

MCH 283 CNC Router Mastercam Programming 3.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. This is a preparatory course in CAD/CAM designed to introduce personal computing and the operational basics of Mastercam Router required to produce a CNC manufactured part. Prerequisite: MCH 282. Audit available.
MCH 284 Computer Aided Manufacturing 3.00 A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Provides an introduction to the development of NC machine tool manufacturing processes using computer aided process planning and advanced CAD/CAM software. Emphasizes analysis and planning required for successful NC production, development of CAD drawings and solid models for CAM program development, toolpath simulation software, and manufacturing engineering issues associated with NC based production. Prerequisite: MCH 273. Audit available.


MCH 288 Certified Manufacturing Technologist Review 4.00 Technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Provides a review of the material to prepare for the Society of Manufacturing Engineers (SME) Certification Test for the Manufacturing Technologist (CMTfG). Prerequisite: Industrial experience and/or manufacturing enterprise/engineering technology coursework required. Audit available.

MCH 289 Certified Manufacturing Engineer Review 4.00 Technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Provides a review of the material to prepare for the Society of Manufacturing Engineers (SME) Certification Test for the Manufacturing Engineer (CMTfE) with emphasis in Processes. Audit available.

MCH 290 Mastercam Fundamentals Orientation 1.00 Introduces to use of Mastercam CAD/CAM software for community members, engineering, and art students to acquire skills to access additional technology in manufacturing labs, such as CNC machines, additive type RP machines, and laser systems. Create wireframe and limited solid geometry, and output of CNC code as well as STL and DXF formatted files. Audit available.

MCH 291 Laser Cutting and Engraving Fundamentals 1.00 Introduces how to setup and operate a laser engraving machine using CorelDraw software as the print driver. Includes time for student project work. Audit available.

MCH 292 FDM Additive Manufacturing Fundamentals Orientation 1.50 Introduces how to setup, operate, and maintain a Dimensions brand Fused Deposition Modeling (FDM) machine using solid support material, to manufacture prototype or production parts. Students will prototype their own designs using up to five cubic inches of material. Requires CAD solid model experience and access to a CAD system that outputs .STL formatted file. Audit available.

MCH 293 CNC Router Fundamentals Orientation 1.00 Introduces how to setup and operate a Techno brand CNC router to manufacture a simple project. Exploratory of the machines application, or as a fundamentals class for engineering and art students, and others to acquire skills to re-engineer objects of their own design. Students must be proficient at CNC "G" code for milling applications prior to taking the course. Audit available.

MCH 294 3 Dimensional Digital Laser Scanning Fundamentals 1.50 Introduces an understanding of how to setup and use a NextEngine brand 3 dimensional digital laser scanner and to output data for CAD software use. Exploration of the machines application, or as a fundamentals class for engineering and art students, and others to acquire skills to re-engineer objects of their own design. Students must be proficient at basic computer operational skills literacy and have an understanding of CAD solid modeling. Audit available.

MEDICAL LABORATORY TECHNOLOGY

MLT 100 Medical Office Laboratory Orientation 3.00 Introduces clinical laboratory principles and procedures commonly performed in the physician’s office setting, including specimen collection and handling, urinalysis, basic hematology, chemistry, serology, microbiology and quality control. Prerequisites: MP 111 and Bi 55 or Bi 122 or Bi 233. Audit available.

MLT 111 Medical Technology I 4.00 Introduces the field of clinical laboratory science, including an introduction to the use and care of the microscope and other laboratory supplies and equipment, basic blood cell morphology, basic urinalysis, bloodborne pathogens, and ABO/Rh blood grouping. Prerequisite: Acceptance into first year of Medical Laboratory Technology Program. Audit available.

MLT 112 Medical Technology II 4.00 This is the second course in a sequence introducing the field of clinical laboratory science. Includes an introduction to clinical chemistry, quality control and laboratory statistics. The study of hematology, blood collection and coagulation are also included. Prerequisite: MLT 111. Audit available.

MLT 113 Introduction to Medical Microbiology 4.00 Introduces clinical bacteriology and the taxonomic approach to major human pathogens. Presents an overview of the organization and function of the clinical microbiology laboratory. Introduces basic practices of specimen processing, handling, and work-up. Stresses the development of basic skills necessary to work in the microbiology laboratory. Prerequisite: MLT 112. Audit available.

MLT 150 Lab Assistant - Phlebotomy Practicum 7.00 Covers basic laboratory assisting skills in a clinical laboratory setting. Introduces specimen processing, phlebotomy and laboratory information systems. Stresses professionalism, interpersonal skills and safety. Department permission required. Keyboarding skills recommended. Audit available.

MLT 170 Phlebotomy Practicum 4.00 Introduces the clinical laboratory and the skills to become proficient in basic phlebotomy procedures. Covers basic specimen processing and laboratory information systems. Stresses professionalism, safety and interpersonal skills in the health care setting. Department permission required. Audit available.

MLT 201 Introduction to Histologic Techniques I 4.00 First course of a two-course sequence. Introduces histologic knowledge and skills including instrumentation, tissue fixation, embedding, sectioning, staining and troubleshooting. Stresses professionalism and safety in the medical setting. Department permission required. Audit available.

MLT 211 Clinical Chemistry I 3.00 Introduces pathophysiology, diagnosis, and monitoring of select human diseases on an organ system basis. Includes: enzymology, acid-base balance, lipid metabolism, liver and cardiac pathophysiology, and protein metabolism. Acceptance into the second year of the MLT Program required. Audit available.

MLT 221 Clinical Chemistry II 4.00 Second course of two-term sequence. Introduces histologic knowledge and skills including instrumentation, staining techniques, frozen sections and immunohistochemical techniques. Stresses professionalism and safety in medical settings. Prerequisite: MLT 201. Audit available.

MLT 222 Clinical Chemistry III 4.00 Focuses on: Physiology, Pathophysiology and analysis of ionic acid, cholesterol and triglycerides, acid-base balance, blood gas analysis and interpretation, proteins, and enzymology. The course also introduces organ system assessment using various chemistry panels. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 223 Clinical Chemistry III 3.00 Presents coagulation theory, tests and disease correlation; non-protein nitrogenous waste; thyroid conditions; electrolytes; toxicology and therapeutic drug monitoring; and protein electrophoresis testing principles and correlation of abnormal results with various disease states. Includes molecular diagnostic techniques and its applicability to the clinical laboratory. Acceptance into the second year of the MLT Program required. Audit available.

MLT 230 Body Fluids 3.00 Introduces the composition, testing procedures, and the clinical correlation of results for cerebrospinal, synovial, pleural, pericardial, seminal, amniotic, and peritoneal fluids. Presents laboratory mathematics, autoimmune diseases, special
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MLT 241 Immunohematology I 3.00 Introduces a general understanding of basic immunology and the various antigen-antibody reactions with emphasis on agglutination reactions. Reviews and further develops knowledge and skills in the areas of the ABO and Rh blood group systems. Acceptance into the second year of the MLT Program required. Audit available.

MLT 242 Immunohematology II 4.00 Presents and discusses ABO subgroups and blood group systems other than ABO and Rh, testing methods, Hemolytic Disease of the Newborn, donor selection, blood components, anticoagulants, and transfusion reactions. Discusses principles involved in various serologic tests. Acceptance into the second year of the MLT Program required. Audit available.

MLT 250 Hematology 4.00 Introduces and develops knowledge and skills in the areas of hemoglobin, hematocrit, blood cell counts and blood cell morphology. Presents abnormalities, anomalies, and conditions affecting red cell blood cells and white blood cells. Introduces principles of automated instrumentation and application of flow cytometry to hematology are also presented. Acceptance into the second year of the MLT Program required. Audit available.

MLT 261 Bacteriology I 4.00 Introduces basic practices and principles of clinical bacteriology, focusing on pathogenic bacteria encountered in the blood, central nervous system, and genitourinary tract. Applies common algorithms used for identification of clinically significant pathogens. Introduces principles and procedures of molecular diagnostic techniques and its applicability to the clinical laboratory. Acceptance into the second year of the MLT Program required. Audit available.

MLT 262 Bacteriology II 3.00 Discusses practices and principles of clinical bacteriology, focusing on pathogenic bacteria encountered in the gastrointestinal and respiratory tracts, soft and solid tissues, and infections of special patient populations. Applies common algorithms used for identification of clinically significant pathogens. Introduces current molecular techniques used for identification and expands on concepts of antimicrobial testing and therapy. Acceptance into the second year of the MLT Program required. Audit available.

MLT 263 Medical Parasitology 3.00 Introduces the field of medical parasitology. Identifies characteristics, life cycles, pathogenicity, and testing methods for various relevant organisms. Acceptance into the second year of the MLT Program required. Audit available.

MLT 264 Medical Mycology 3.00 Introduces the field of medical mycology. Focuses on the clinically significant fungi and covers specimen processing and diagnostic procedures for the cultivation and identification of fungal pathogens. Acceptance into the second year of the MLT Program required. Audit available.

MLT 271 Clinical Laboratory Practice I 3.00 Students are assigned to various clinical laboratories to become familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community. Students gain experience in dealing with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 272 Clinical Laboratory Practice II 3.00 Students are assigned to various clinical laboratories to become familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community. Students gain experience in dealing with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 273 Clinical Laboratory Practice III 3.00 Students are assigned to various clinical laboratories to become familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community. Students gain experience in dealing with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 274 Clinical Laboratory Practice IV 8.00 Students are assigned to various clinical laboratories to become familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioners relates to the entire medical team and to the community. Students gain experience with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 281 Clinical Seminar 4.00 Introduces new concepts in clinical laboratory medicine. Introduces professional issues in preparation for certification examination. Explores techniques for writing standard operating procedures. Acceptance into second year of MLT Program required. Audit available.

MM 110 Introduction to Multimedia 1.00 Explores the different roles, skill sets, jobs and equipment associated with the development of digital media. Examines the processes involved in producing content to meet a specific communication goal toward a target audience. Audit available.

MM 120 Multimedia Design 2.00 Introduces the multimedia development and design process. Includes identifying the functions and skills of a multimedia team, defining project goals and target audience, utilizing information architecture and user experience design principles, evaluating projects to determine deliverables and resource needs. Prerequisite/concurrent: MM 110, or instructor permission. Audit available.

MM 130 Multimedia Graphic Video and Audio Production 3.00 Introduces graphic, audio and video development for multimedia. Includes use of industry standard tools to produce digital media elements composed of graphics, audio and video to communicate an idea to a targeted audience. Prerequisites/concurrent: MM 120, or instructor permission. Audit available.

MM 140 Multimedia Authoring I 3.00 Covers production of an interactive multimedia project incorporating graphics, text, video, and audio using multimedia industry standard authoring software. Incorporate the principles and practices from MM110, MM120, and MM130. Prerequisite/concurrent: MM 130 or instructor permission. Audit available.

MM 141 Incorporating Multimedia Elements in Presentation Software 2.00 Plan and produce a multimedia presentation using industry level presentation software (Microsoft PowerPoint[TM]). Incorporate design theory, clip-art, video clips and sound into a Microsoft PowerPoint[TM] presentation. Emphasis on quality, presentation flow and program design. Audit available.

MM 150 Multimedia Project Review, Testing and Delivery 1.00 Covers the final steps of a multimedia project including, quality assurance, beta testing, group evaluation and debugging techniques. Examines the different ways multimedia is currently being used. Covers tips and techniques for successfully promoting multimedia work. Prerequisite/concurrent: MM 140 or instructor permission. Audit available.

MM 160 Marketing Yourself as a Multimedia Professional 2.00 Explores the employment and independent market for multimedia professionals, including job qualifications for various positions in small to large organizations, as well as the general business environment for multimedia production. Provides an overview and opportunity to apply methods and practices used in finding and obtaining employment in the multimedia industry. Prerequisite/concurrent: MM 130 and MM 140 or instructor permission. Audit available.
MM 230 Graphics for Multimedia 4.00
Continues to develop skills using multimedia industry standard graphic software to create, edit and optimize graphic images for use in multimedia and interactive computer applications. Explores graphic creation, color, composition and compositing of multiple graphics for use in multimedia presentations and other multimedia formats. Prerequisite: MM 130 or instructor permission. Audit available.

MM 231 Vector Graphics & Animation for the World Wide Web 3.00
Provides instruction and practice in creating short animations, long-form animations with synchronized sounds, interactive walkthrough animations and navigation controls using multimedia industry standard vector graphics and animations software. Prerequisites: MM 130, 140; CAS 111D, 175; or instructor permission. Audit available.

MM 232 Multimedia 3D Modeling and Animation 3.00
Covers how to create, edit, and take apart 3D models and animations using industry standard 3D modeling and animation software. Develops foundational skills to work, create, and navigate utilizing the features of the digital 3D modeling workspace. Explores basic elements of the 3D development of objects, environments and animations. Prerequisites: MM 130, 140; CAS 111D; or instructor permission. Audit available.

MM 233 3D Character Modeling and Animation 3.00
Continues the study of 3D emphasizing the creation of animated characters. Involves sophisticated techniques for creating organic shapes and natural motion, matching facial expressions and lip movement to dialog and using kinematics for character movement. Provides the opportunity to individually experience all aspects of production. Includes group production projects. Prerequisites: MM 232, 253, 254, and 255. Audit available.

MM 234 3D for Interactivity 3.00
Includes how to design, create, and display high-quality, interactive 3D graphics and animations using industry standard 3D modeling tools. Explores and tests delivery options, limitations, and quality issues. Prerequisites: MM 232, 253, 254, 240, 241, and 255. Audit available.

MM 235 Digital Video Editing and Production 3.00
Explores the post-production process for non-linear editing of digital video for use in video production and multimedia applications. Focuses on industry standard editing software to develop the foundation grammar of editing including continuity and montage principles. Prerequisite: MM 130 or instructor permission. Audit available.

MM 236 Internet Delivery of Digital Video and Audio Files 3.00
Introduces preparing video and audio for Internet playback, incorporating the principles of quality video and audio streaming techniques and technology. Introduces adaptation of video and audio segments for streaming using industry-standard digital editing and compression software. Covers cross-platform/cross-browser projects on both PCC-provided and publically available user-generated content (UGC) hosting services to be tested for performance on Macintosh and Windows computers using various browsers and players. Prerequisite: MM 235; CAS 111D; or instructor permission. Audit available.

MM 237 Video Compositing and Effects 4.00
Introduces the creation of motion graphics using industry standard software. Illustrates the basic concepts of motion graphics, as well as the functions and capabilities of the software tools including their extensive compositing, keying, animation, and special effects capabilities. Prerequisites: MM 230, MM 235 Audit available.

MM 238 Creating Professional DVD-Video 4.00
Introduces creation of custom DVD-Video using professional level authoring software. Integrates video with audio, graphics, and other assets. Develops custom navigation, menus, chapters, and interactivity. Encodes uncompressed audio into highly compressed Dolby digital AC-3 streams, and incorporates it into the DVD authoring software. Prerequisite: MM 140 and MM 235, or instructor permission. Audit available.

MM 240 Multimedia Authoring II-Scripting 4.00
Covers industry standard web application tools to author interactive projects. Covers essential and foundational authoring languages, concepts and practices. Includes assembly of digital media elements, made interactive through authoring, and then tested for function, design, usability, and bugs. Prerequisites: MM 140, 231; or instructor permission. Audit available.

MM 241 Multimedia Authoring III - Scripting 4.00
Continues to develop the essential and foundational authoring languages, concepts and practices. Includes advanced assembly of digital media elements will be assembled, made interactive through authoring, for web or mobile phone delivery and then tested for function, design, usability, and bugs. Prerequisite: MM 240; or instructor permission. Audit available.

MM 244 Creating Interactive Web Pages 3.00
Develop web pages using multimedia industry standard web page development software, such as Macromedia Dreamweaver (TM) and web animation tools, such as Macromedia Flash (TM). Incorporate multimedia elements for optimal Internet delivery. Commercially available multimedia elements (clip media) will be used for constructing the web page. Prerequisites: CAS 111D and MM 231 or instructor permission. Audit available.

MM 245 Internet Delivery Methods 3.00
Continues skill development in the production of digital media to a mastery level using industry standard software. Prerequisites: MM 251. Audit available.

MM 246 Post-Production Sound for Video 2.00
Introduces the practice of sound editing for video projects. Examines multiple methods and workflows including: synchronization of sound with picture, modification to maximize intelligibility, dialog replacement, the creation, collection and use of sound effects and music, mixing, and conforming sound to distribution standards. Prerequisites: MM 235 and MM 260. Audit available.

MM 250 Advanced Multimedia Project Development I 3.00
Explores the connection between creative and technical skills required to develop digital multimedia projects. Covers planning, producing and implementation of interactive projects using industry standard software. Prerequisites: MM 230, 231, 235. Audit available.

MM 251 Advanced Multimedia Project Development II 3.00
Continues to develop digital multimedia skills used in planning, producing and implementing interactive projects using industry standard software. Prerequisites: MM 250. Audit available.

MM 252 Advanced Multimedia Project Development III 3.00
Further develops the project created in MM 251. Prepare an interactive multimedia project using industry standard software tools. Project development will include planning, production, project review and, implementing the evaluation suggestions. Final projects will be submitted for faculty and peer critiques and then placed on the World Wide Web. Prerequisite: MM 251 or instructor permission. Audit available.

MM 253 Intermediate Modeling and Texturing 3.00
Continues exploring 3D modeling and texturing through hands-on exercise and assignments. Explores relevant modeling tools, advanced modeling theory, and intermediate texturing techniques. Prerequisite: MM 232. Audit available.

MM 254 Character Rigging and Animation 3.00
Explores 3D character rigging and animation through lectures and assignments. Covers the creation of a professional bipedal character rigging, character animation and lip-syncing facial animation. Prerequisite: MM 232. Audit available.

MM 255 3D Lighting and Texturing 3.00
Covers lighting techniques with an in-depth focus on the technical aspects of both lighting and shadows. Includes UV unwrapping and layout skills, and advanced graphic tool techniques into order to create professional quality textures. Prerequisite: MM 232 or instructor permission. Audit available.

MM 256 Graphics for Multimedia II 4.00
Continues to develop skills using multimedia industry standard graphic software to create, edit and optimize graphic images for use in multimedia and interactive computer applications. Explores techniques to manage workflow of graphics production essential for use in multimedia presentations and other multimedia formats. Prerequisite: MM 230. Audit available.
COURSE DESCRIPTIONS

MM 260 Video Production I 4.00 Introduces digital video production, with a focus on the fundamentals of project planning, basic camera functions, shooting techniques, lighting principles, and audio recording fundamentals. Includes preproduction issues, production terminology, and evaluation of industry etiquette. Prerequisites: MM 130 and MM 261. Audit available.

MM 261 Video Production II 4.00 Continues video production at an intermediate level; includes digital camera, lighting, audio, and preproduction techniques. Focuses on narrative production techniques. Focuses on narrative production techniques. Includes overview of industry crew positions, directing actors and scene coverage. Prerequisite: MM 235 and MM 260. Audit available.

MM 262 Video Production III 4.00 Explores documentary video making through hands-on exercises and assignments. Covers relevant preproduction methods and materials, the small-crew field production model, interviewing techniques, and further development of camera, lighting, audio, and editing skills. Prerequisites: MM 235, MM 260, MM 261, or instructor permission. Audit available.

MM 270 Writing for Multimedia 3.00 Introduces creating and adapting technical information and linear narratives for non-linear, interactive multimedia applications. Includes developing ideas into multimedia scripts, incorporating text with other media, writing narration, and writing for voice-over, writing for interactivity, presenting text on-screen, and writing concisely. Prerequisites: MM 120; WR 121, 122, 123 or WR 214; or instructor permission. Audit available.

MM 280 Cooperative Work Experience in Multimedia Practice and enhance skills gained in the Multimedia 100 and 200 level classes. Spend 4 to 12 hours per week working in the multimedia industry (public/private sector organizations) working at an approved multimedia development company doing cooperative work. Develop career objectives by linking course work with out-of-classroom experiences by becoming part of the “multimedia team” learning cooperation, team building, communication skills and project development. Prerequisites: MM 230, 231, 235, 236, 240, 241, 245 or instructor permission. Audit available.

MEDICAL PROFESSIONS

MP 109 Basic Medical Terminology 2.00 Analyze the structure of medical words and apply this to basic anatomy, physiology and disease processes of the human body. Covers prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms for the basic body systems. Recommend: RD 90 and WR 90. Audit available.

MP 110 Basic Medical Terminology 2.00 Reviews in depth the basic body systems and medical terminology taught in MP 109. Expands knowledge to include prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms used in oncology, psychiatry, radiology and nuclear medicine. Recommend: RD 90 and WR 90. Prerequisite: MP 109 Audit available.

MP 111 Medical Terminology 4.00 Covers prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms. Course taught by body systems. English communication skills necessary. Audit available.

MP 140 Introduction to Health Law and Professional Standards 3.00 Introduces the legal aspects, code of ethics and policy issues relevant to allied health. Emphasizes confidentiality, communication, patient rights, codes of ethics, medical liability, medical malpractice, release of information, case studies and the professional code of ethics. Includes the concepts of professional credentialing and responsibility, liability, and working within legal/ethical boundaries. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MP 150 Introduction to Electronic Health Records 3.00 Introduces basic concepts of use and implementation of an Electronic Health Records (EHR) system. Provides exposure to basic navigation of an EHR. Explores issues around privacy, security, government regulations and ethical legal aspects of the health information technology environment.

MAGNETIC RESONANCE IMAGING

MRI 101 MRI Physics I - Principles, Equipment & Safety 2.00 Introduces Magnetic Resonance Imaging theory and application, patient care, MR safety, Imaging procedures, data acquisition and processing and the physical principles of image formation. Department permission is required.

MRI 102 MRI Physics II - Advanced Principles 2.00 Continues Magnetic Resonance Imaging theory and application, patient care, MR safety, imaging procedures, data acquisition and processing and the physical principles of image formation. Department permission is required. Prerequisite: MRI 101.

MRI 111 MRI Cross-Sectional Anatomy I 2.00 Introduces the normal appearance of anatomical structures of the head, soft tissue neck, spine and lower extremity in normal planes. Enables students to differentiate between normal and abnormal anatomical structures. Primary focus is MR appearance of anatomy but includes correlation with anatomical drawings and CT anatomy. Department permission is required.

MRI 112 MRI Cross-Sectional Anatomy II 1.00 Introduces the normal appearance of anatomical structures of the upper extremity, chest, abdomen and pelvis in normal planes. Enables students to differentiate between normal and abnormal anatomical structures. Primary focus is MR appearance of anatomy but includes correlation with anatomical drawings and CT anatomy. Department permission required. Prerequisite: MRI 111.

MRI 121 MRI Clinical Education I 6.00 Provides clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, MR imaging procedures, MR safety, medicolegal and ethical protocols, record keeping and patient care. Requires clinical competencies, objectives, performance assessments and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist and will develop and exhibit proper professional work ethic. Department permission required. Prerequisite: MRI 121.

MRI 122 MRI Clinical Education II 8.00 Provides intermediate clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, MR imaging procedures, MR safety, medicolegal and ethical protocols, record keeping and patient care. Requires clinical competencies, objectives, performance assessments and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist and will develop and exhibit proper professional work ethic. Department permission required. Prerequisite: MRI 121.

MRI 123 MRI Clinical Education III 8.00 Provides advanced clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, understanding and application of imaging parameters, MR safety, medicolegal and ethical protocols, record keeping and patient care. Requires clinical competencies, objectives, performance assessments and attendance. The student will learn the necessary skills that are required to function independently in the clinical area as a MR Technologist and will develop and exhibit proper professional work ethic. Department permission is required. Prerequisite: MRI 122.

MRI 130 MRI Imaging Procedures and Diagnosis 2.00 Correlates and compares the normal appearance of anatomy in all body sections with pathologic findings. Discussion to include comparison of T1 vs. T2 imaging techniques as they correlate to imaging protocols and diagnosis. The pathology section of the course is designed to give the student an in depth consideration of disease processes. Special equipment, fat suppression and coil considerations will be discussed in all sections. The role of contrast agents in diagnosis will be discussed in all sections. Department permission required. Prerequisites: MRI 102, 112, and 122.

MRI 140 MRI Registry Review 1.00 Provides a comprehensive review of patient care, imaging procedures, data acquisition and processing and physical principles of image formation for magnetic resonance imaging.
imaging. Department permission required. Prerequisite: MRI 102, MRI 112, and MRI 122.

**MRI 271 MRI Clinical I 6.00** Provides clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, MR imaging procedures, MR safety, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist and will develop and exhibit proper professional work ethic. Department permission required.

**MRI 272 MRI Clinical II 8.00** Provides intermediate clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, MR imaging procedures, MR safety, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessments and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist, and will develop and exhibit proper professional work ethic. Department permission required. Prerequisite: MRI 271 or MRI 121.

**MRI 273 MRI Clinical III 8.00** Provides advanced clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, understanding and application of imaging parameters, MR safety, medicolegal and ethical protocols, record keeping and patient care. Requires clinical competencies, objectives, performance assessments and attendance. The student will learn the necessary skills that required to function independently in the clinical area as a MR Technologist, and will develop and exhibit proper professional work ethic. Department permission is required. Prerequisite: MRI 272 or MRI 122.

**MANAGEMENT/SUPERVISORY DEVELOPMENT**

**MSD 101 Principles of Management and Supervision 3.00** Discusses concepts and practices of fundamental supervisory skills such as planning, staffing, communication, ethics, leadership, impact of technology, training, conflict management, problem solving, quality improvement, safety management and performance reviews. Audit available.

**MSD 105 Interpersonal Communication 3.00** Discusses how principles of interpersonal communication operate in everyday life such as: communication processes, barriers and misconceptions; impact of cultural values and norms; influences of perception and judgment; communication and self-talk; creating and responding to messages; characteristics of nonverbal communication and their impact; listening effectively; identifying and controlling emotions; developing an effective communications climate; and effectively managing conflict. Audit available.

**MSD 107 Organizations & People 3.00** This course is about how individual, group, and organizational characteristics influence each other. Included are personality development as it affects group and organizational interactions; interpersonal and work group processes; job design, organizational structure and culture. Audit available.

**MSD 110 Gender Conflict Resolution 1.00** This 10-hour workshop examines gender and multi-cultural communication. The material includes identifying and evaluating sources of conflict and developing strategies and skills to positively manage and resolve conflicts. Audit available.

**MSD 111 Corresponding Effectively At Work 3.00** Discusses the necessary communication tools and how to use them in a variety of ways such as: writing letters, memos, performance reviews, reports and brochures relating to job situations. Audit available.

**MSD 113 Influence Without Authority 1.00** Participants will learn to clearly distinguish between the terms power, influence and authority. Topics include: effective listening, lateral relationships in the workplace, influencing peers, influencing one’s supervisor, mutual exchange, rules of reciprocation, knowing yourself and your allies, and building relationships. Audit available.

**MSD 115 Improving Work Relations 3.00** Discusses management techniques, methods and strategies for helping managers, aspiring managers and staff professionals step out from the “crowd of look-a-likes.” Topics include improving individual effectiveness, developing interpersonal relationships, functions of work groups, multi-cultural relations, productivity and quality at the organizational level. Audit available.

**MSD 116 Creative Thinking for Innovative Change 1.00** In today’s-and tomorrow’s-unpredictable and increasingly challenging world, we must make a fundamental choice: to be changed, inevitably, by the forces churning around us, or to be the change-leader through innovative actions. Learn how to jump-start your own creative, innovative thinking. Audit available.

**MSD 117 Customer Relations 3.00** Discusses the importance of customer relations. Emphasis on techniques for effective customer service. Explores setting the stage, analyzing and developing customer service policies, listening, handling problems and concerns, building a team and growing a business. Audit available.

**MSD 119A Intercultural Communication 1.00** Identifies sources of common cultural misunderstandings. Helps solve basic interpersonal challenges through discussion, video, and practice. Gives resources to improve relationships. Audit available.

**MSD 121 Leadership Skill Development 3.00** Discusses new leadership theories and paradigm shifts and strategies for leading others and managing yourself. Topics include strategies for developing organizational visions, communication with clear meaning, developing trust through positioning, creating the learning organization, and sharing leadership through empowerment. Audit available.

**MSD 122 Motivation Without Manipulation 1.00** This 10-hour workshop will focus on setting a climate for intrinsic motivation. Topics include organizational theories and their impact, ranking needs in the workplace, delegation obstacles to motivation, recognition systems and emotional intelligence. Audit available.

**MSD 122A Strength Based Leadership 1.00** Examines personal strengths and explores how a strength's focus may be applied to leadership roles both personally and professionally. Enhances understanding of personal strengths and how these ideas can be used in leadership to develop and make the most of the strengths of others. Audit available.

**MSD 123 Job Search Strategies 1.00** This 10-hour workshop explores strategies for finding the "right" job. Includes self-discovery, goal-setting, prospecting, networking, resume-writing, interviewing, career-planning, and self-marketing skills. Audit available.

**MSD 123A Innovation and New Products 1.00** Examines the impact of change, innovation, and technology on an organization's ability to thrive and be competitive. Explores innovation which involves the actions and activities of people directed at changing their organizations and their business environments. Introduces how to create a comprehensive business proposal for innovation, which addresses either strategic or tactical objectives of the organization. Audit available.

**MSD 128 Crisis Intervention: Handling the Difficult Person 1.00** This workshop will discuss the phases of situation crisis intervention. Topics include techniques for approaching and handling the difficult person, the potentially dangerous person, and the potentially volatile situation. Audit available.

**MSD 130 Creative Problem Solving 3.00** Covers creative problem solving and thinking, steps in the creative problem-solving process, right and left brain thinking, ambiguity and imagination, overcoming barriers to creative thinking, synthesis, and applying creative problem-solving to the organization. Audit available.

**MSD 133 Brave New Workplace: Strategies to Excel in World of Change 1.00** Discover tools and strategies to cultivate creative thinking your competitive edge in these turbulent, exciting times. We are surrounded by simple, obvious solutions that can dramatically increase our income, power influence and ultimately, long-term success. Our challenge is to see them! Audit available.
COURSE DESCRIPTIONS

MSD 134 Who Moved My Cheese 1.00
Change is constant, it’s all around us and it’s inevitable. This class on transition and change is based on the #1 best seller business book by Spencer Johnson, M.D. called Who Moved My Cheese. This course is fun learning and it positively equips people to better understand and grow from change. Audit available.

MSD 140 Management Workshops 1.00
This workshop focuses on a wide range of management issues: maintaining quality, building teams, setting ethical standards, managing diversity, implementing technology, maintaining an effect organization, balancing authority and leadership, problem solving and decision making. Audit available.

MSD 148 Asserting Yourself in the Workplace 1.00
This workshop looks at three typical types of human behavior and focuses on assertiveness. Particular attention given to creating appropriate situations for assertive behavior to occur and opportunities for skill practice also provided. Audit available.

MSD 150 Listening Skills 1.00
Acquire an understanding of the techniques of active listening and communication skills. Communication techniques such as the perception check, interpretive listening, paraphrasing and questioning will be presented, and opportunity to practice these skills included. Audit available.

MSD 151 Dealing with Difficult People 1.00
This 10-hour workshop explores ideas for coping successfully with difficult people and situations. The basic psychology and personal styles of difficult interactions is examined. Specific techniques for dealing with difficult encounters and enhancing relationships are discussed along with hands-on application. Audit available.

MSD 157 Conflict Management 1.00
This 10-hour workshop examines common causes of conflict and developing approaches for managing conflict for positive results. Content includes learning practical on-the-job techniques for working through conflict such as "cooperative conflict," dealing with anger, and prevention ideas. Audit available.

MSD 159 Stress Control 1.00
This 10-hour workshop focuses on understanding your own signs of stress. Includes techniques for preventing stress, identifications of personality factors and interpersonal factors related to stress, and job burnout. Audit available.

MSD 160A Communication Styles 1.00
Concentrates on understanding various communication styles including differences in perspectives, styles, beliefs and feelings. Discussion includes building relationships at home, work and in communities with a wide range of people. Audit available.

MSD 161 Customer Relations 1.00
This 10-hour workshop discusses the principles of effective customer relations. Topics include identifying and responding to customer needs, dealing with difficult customers, developing a positive customer climate, building effective verbal and nonverbal communication skills. Audit available.

MSD 162 Coping with Angry Feelings and Angry People 1.00
This 10-hour workshop focuses on how to cope more effectively and constructively with angry feelings. Also includes understanding the impact anger has on ourselves and others; learning how to gain control over our reaction to anger-pronking situations; and converting angry feelings into positive action. Audit available.

MSD 164 Better Memos and Letters 1.00
This 10-hour workshop teaches effective writing skills for the workplace. Topics include learning how to begin writing and when to stop, becoming more efficient and confident, learning what to include and what to avoid in memos and letters. Audit available.

MSD 174 Time Management 1.00
This 10-hour workshop focuses on learning how to evaluate time usage to make it more efficient and more effective. Topics include developing awareness of how we use our time, understanding productivity, developing a time management system, protecting our time, and additional time management tips. Audit available.

MSD 174B Leadership & Effective Decision Making 1.00
Covers historic examples, characteristics and styles of leadership. Participants will explore leadership activities in public and private organizations; investigate opportunities to exercise personal leadership skills, contribute to group leadership situations and discuss the impact of moral and ethical factors in decision making. Audit available.

MSD 175B Direct Communication in the Workplace 1.00
This 10-hour workshop focuses on various communication situations (both verbal and written) in the workplace. Topics include putting oneself in the receiver's shoes, understanding what the listener's hear, adapting messages to enhance the receiver's understanding, and focusing on the results the sender wants to achieve. Audit available.

MSD 176 Nonverbal Communication 1.00
This 10-hour workshop discusses the impact non-verbal communication has on the understanding. Topics include body language, eye contact, attitude, and manner of presentation and cultural differences. Audit available.

MSD 176A Interpersonal Communication 1.00
This 10-hour workshop explores a practical approach to understanding interpersonal communication. Topics include techniques for active listening, methods for conflict resolution, and learning techniques for becoming "other person" focused. Audit available.

MSD 177B Coaching Great Performance 1.00
Centers on how to effectively work with people in a helping relationship. Introduction to coaching and gaining hands-on experience being and working with a client. Coaching helps clients examine the way they do things as well as what they do. Build your coaching skills by focusing on five key principles of coaching: coaching listening, powerful inquiry, creating choice, balance and fulfillment. Audit available.

MSD 179B Avoid Burnout: Build Resilience 1.00
Explores symptoms of the five distinct and sequential stages of burnout; the three major areas of negative stress; the relationship between stress and burnout; the five distinct and interrelated characteristics of personal resilience; and the application of coping skills, antidotes and resilience to avoid burnout. Audit available.

MSD 180A Goal Setting and Productivity 1.00
This 10-hour workshop focuses on steps for setting goals and successfully completing them. Includes the SMART goal approach, the benefits of setting goals, identifying and overcoming obstacles, and creating achievable, small steps. Audit available.

MSD 187 Humor in the Workplace 1.00
Concentrates on the rediscovery of laughter and humor through situational humor to re-build human connection, improve individual health, kindle creativity, and establish perspective in a work world confused by strategies such as downsizing, reengineering, outsourcing, etc. Participants should be forewarned that sporadic laughter is entirely possible. Audit available.

MSD 188B Self Management for Success 1.00
We can't manage others effectively until we learn to manage ourselves. This course helps you identify your roadblocks to success--including the "too much to do, too little time" syndrome, excessive stress, unclear goals, and unproductive work patterns--and provides strategies to change these habits. You will gain a new sense of enthusiasm as you redirect your energy and take a new approach to your work. Audit available.

MSD 192A Project Management 1.00
Provides both the tools and behavioral skills necessary to manage any project successfully. All steps of the project cycle are modeled with opportunities for participants to practice each step. Participants will learn to increase productivity, present a project activity plan using professional tools and develop project team building skills. Audit available.

MSD 193 Self Esteem the Key to Success 1.00
This 10-hour workshop focuses on the cornerstone of behavior: self-esteem. Topics include learning how self-esteem affects our relationships, our ability to solve problems and set goals, our work performance, and our health. Emphasizes understanding the importance of maintaining a healthy self-esteem when handling conflict and many major dilemmas common to modern life. Audit available.
COURSE DESCRIPTIONS

MSD 193A Leadership Skill Development 1.00 Leadership is an essential part of running a quality organization. Learn about the various facets that define leadership today. Audit available.

MSD 194 Effective Presentation Skills 1.00 This 10-hour workshop focuses on preparing participants for giving an effective presentation. Topics include selecting topics, analyzing the audience, developing ideas, selecting and using visual aids, handling questions and overcoming objections. Each participant will give a presentation during the session. Audit available.

MSD 198A Male/Female Communication Style Differences 1.00 Understanding the other's ways of talking is a giant leap across the communication gap between women and men and a giant step toward opening lines of communication. Audit available.

MSD 198B Exploring 7 Habits of Highly Effective People 1.00 Each of Dr. Covey's 7 Habits is rich in life-helpful ideas. This class explains how to apply them to your day. Practical tips on stress control, conflict resolution, time management and communication are discussed. Audit available.

MSD 200 Organizational Behavior 3.00 Explores the changing relationships and responsibilities between organizations and their various stakeholders. Social and ethical issues of the community in which the company exists, employee rights and diversity, global corporate citizenship, role of government oversight of business, environmental issues, and consumer protection. Audit available.

MSD 202 Training the Employee 3.00 Develops practical perspective of training as an organizational resource. Includes ways people learn, identifying employee training needs, preparing training activities, reviewing training methods and objectives, evaluation criteria, developing strategy, alternatives to training, and practicum. Audit available.

MSD 206 The Troubled Employee 3.00 Reviews the factors contributing to the development of the troubled employee. Includes identifying potential troubled employee work habits and attitudes (e.g. absenteeism, tardiness, sudden personality change), Employee Assistance Programs and possible community assistance agencies. Audit available.

MSD 216 Budgeting for Managers 3.00 Covers budgeting vocabulary, finance principles, record keeping techniques, cash management, cash budgeting and capital budgeting. Recommended: Work-related budgeting experience. Audit available.

MSD 222 Human Resource Management: Personnel 3.00 Covers personnel operations, human resource planning, job design and job analysis, recruitment and equal employment opportunity, and job selection and placement. Audit available.

MSD 223 Human Resource Management: Performance and Compensation 3.00 Covers performance appraisal, indirect compensation programs, improving productivity and quality of work life, employee rights and collective bargaining. Audit available.

MSD 279 Project Management - Intro 4.00 Examines essential strategies and methods for managing projects. Applies concepts to creating model projects using a step-by-step methodology, building project charters, and developing overall project plans. Explores incorporating projects into strategic growth objectives, using project management tools, and demonstrating project presentation skills. This course is the foundation course of the Project Management series that includes CAS 220, CIS 245, and BA 255. Project Management is a broad term that can include many areas of a business. Audit available.

MSD 280A Supervisory Development- Seminar 1.00 Designed to permit a student in concert with an organization to combine new on-the-job supervisory work experience with concepts and skills learned in supervisory classes and in the process become a greater asset to the organization. Department permission required. Audit available.

MSD 280B Supervisory Development- Seminar 1.00 Designed as a one credit seminar in which the student will learn how to prepare and deliver a work-related plan. Skills learned will be directly related to these activities. Includes a visit by the instructor to the work site and a discussion of the project with the student's supervisor as well as the student. Audit available.

MSD 298 Trends in Management and Supervision 3.00 Examines specific topics of current interest not necessarily covered in other Management/Supervisory Development classes but related to the changing management field. Investigate different topics earning from 1 to 6 credits depending on the length of the class. Other workshop descriptions are available by calling the Management and Supervisory Development Department. Audit available.

MSD 299B Exploring 7 Habits of Highly Effective People 1.00 Each of Dr. Covey's 7 Habits is rich in life-helpful ideas. This class explains how to apply them to your day. Practical tips on stress control, conflict resolution, time management and communication are discussed. Audit available.

MT 100 Introduction to Microelectronics and Nano Technology 3.00 Introduces the methods used to manufacture Micro and Nano technologies. Traces semiconductor processing from raw material to a finished integrated circuit using planar technology. Introduces the processes and equipment used to create devices on the micro and nano scale. Emerging applications of MEMS and Nanotechnology are discussed. Prerequisite: MTH 60; WR 115. Audit available.

MT 101 Introduction to Semiconductor Manufacturing 1.00 Presents an overview of careers in Microelectronics Technology. Also presents a succinct history of the semiconductor manufacturing processing and fundamental clean room protocol. Students will learn about the importance of quality and contamination control emphasis in the industry. Audit available.

MT 102 Introduction to Semiconductor Devices 1.00 Examines commonly made semiconductor devices, including diodes, solar voltaic cells, and MOSFET transistors. Includes electronic materials fundamentals of electricity, conductivity and semiconductor. Audit available.

MT 103 Introduction to Micro and Nano Processing 1.00 Introduces the methods used to manufacture Micro and Nano technologies. Traces semiconductor processing from raw material to a finished integrated circuit using planar technology. Introduces the processes and equipment used to create devices on the micro and nano scale. Emerging applications of MEMS and Nanotechnology are discussed. Audit available.

MT 104 Introduction to Solar Voltacic Processing 1.00 Introduces the methods used to manufacture silicon solar cells. Traces cell processing from raw material to a finished product using planar technology. Introduces the processes and equipment used to create pure single crystal silicon wafers and the processes used to form the solar devices on top of these substrates. Audit available.

MT 108 Statistics for Process Control 2.00 Covers Statistical Process Control (SPC), including plotting and interpreting charts and dealing with disposition situations. Develops understanding of what is meant by common statistical quantities such as mean, median, mode, standard deviation, skew, and also understanding of how common distributions represent real populations. Integrates practice performing computer calculation of these structures and their application to SPC. Prerequisite: MTH60, WR115. Audit available.

MT 109 Intro to Electronics and Instru-
Mentation 3.00 Covers techniques of analysis and troubleshooting of basic electronic circuits that may include sensors and actuators. Labs include measurement and testing techniques, and documentation procedures. Prerequisite: Placement into MTH 60 and WR 115 or higher. Audit available.

MT 111 Electronic Circuits & Devices I 4.00 Covers Ohm’s Law, Kirchhoff’s Voltage and Current Law, Superposition, Thevenin’s Theorem, and R-C circuits. Labs include basic measurement techniques, use of electronic test equipment and proper documentation procedures. Prerequisites: WR 115 and placement into or completion of MTH 95. Audit available.

MT 112 Electronic Circuits & Devices II 4.00 Covers AC circuits. Includes both single frequency and frequency response analysis of circuits containing resistance, capacitance, and inductance. Both trigonometry and phasors will be covered. Labs include circuit construction, computer simulation and testing. Prerequisites: MT 111; MTH 95. Audit available.

MT 113 Electronic Circuits & Devices III 4.00 Covers semiconductor devices - diodes, BJTs, and FETs - and operational amplifiers. DC models as well as frequency response, bandwidth/ rise time relationships, and performance criteria are emphasized. Labs emphasize circuit construction and include simulation of amplifier circuits. Prerequisite: MT 112. Audit available.

MT 121 Digital Systems I 3.00 Covers combinational logic devices and circuits. Includes basic operation of logic gates, Boolean algebra, and MSI logic devices. Labs emphasize prototyping and testing of combinational logic circuits. Prerequisites: WR 115; MTH 65. Audit available.

MT 122 Digital Systems II 3.00 Covers sequential logic devices and circuits. Includes the operation of latches and flip-flops, ripple and synchronous counters, shift registers, memories, and a simple microprocessor system. Labs emphasize prototyping and testing of sequential logic circuits. Prerequisite: MT 121. Audit available.

MT 131 Introduction to Programmable Logic Controllers 3.00 Introduces Programmable Logic Controller programming. Includes PLC components, architecture, execution cycle, data file type and management, variable monitoring, and basic programming instructions. Requires MT 121, MT 122 or equivalent. Prerequisite: Placement into MTH 111 and WR 121.

MT 180 High Tech Employment Strategies 1.00 Covers strategies for: researching, preparing for, and acquiring a job in the MT associated industries of solar, microelectronics and automated manufacturing. Prerequisite/concurrent: MT 101, 102, 103 or 104.

MT 200 Semiconductor Processing 3.00 Explores aspects of semiconductor processing. Covers semiconductor device design (photo-voltaic cells, diodes, bipolar and MOSFET transistors) and the following manufacturing processes: oxidation, lithography, etch, doping, deposition, planarization, and test/sort. Prerequisites: MT 102, MT 103 or MT 104, MT 240, SP 130 or SP 215, or instructor permission. Audit available.

MT 222 Quality Control Methods in Manufacturing 3.00 Explores quality control methods used in semiconductor manufacturing, including statistical process control (SPC), control charts, performance representation and capability measurements. Emphasizes computer manipulation of actual data for analysis and design of quality. Prerequisites: MTH 243 and WR 227 Audit available.

MT 223 Vacuum Technology 3.00 Covers the theory and practice of vacuum as used in semiconductor manufacturing. Topics include vacuum principles, vacuum systems and their components such as pumps, gauges and valves, and finally vacuum trouble-shooting. Prerequisites: MT 101, MT 102, (MT 103 or MT 104), CH 100 or higher, WR 121, or instructor permission. Audit available.

MT 224 Process Equipment I 3.00 Part 1 of our series on semiconductor manufacturing equipment. Covers components commonly used in industrial equipment, such as controllers, controlling software, signal conditioner, sensors, switches, DC and stepper motors and their driver circuits. Also examines how these components can be used together to achieve automatic control in industrial equipment. Prerequisites: (MT 103 or MT 104), MT 113, MT 122, or instructor permission. Audit available.

MT 227 Process Equipment II 3.00 Covers subsystems of a semiconductor processing system. Includes pneumatic and robotic systems. Focuses on assembly, maintenance and troubleshooting. Prerequisite: MT 223 and MT 224 Audit available.

MT 228 Process Equipment III 4.00 Covers a semiconductor processing system. Includes power, vacuum, gas, delivery, robotic and control systems. Focuses on maintenance and troubleshooting. Prerequisites: MT 227, 223, 240. Audit available.

MT 240 RF Plasma Systems 3.00 Covers the theory and practice of RF (Radio Frequency) plasma systems as used in semiconductor manufacturing processes such as etching, chemical vapor deposition (CVD) and sputter deposition. Includes plasma physics, RF power system components, power matching and match circuits, and applications in semiconductor manufacturing. Prerequisite: MT 223, MT 224, CH 100 or higher, WR 227, or instructor permission. Audit available.

MTH 10B Fundamentals of Arithmetic I 2.00 Use of whole numbers to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisite: Pre-Algebra COMPASS score 1-20. Audit available.

MTH 10C Fundamentals of Arithmetic I 2.00 Use of fractions and decimals to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisites: Pre-Algebra COMPASS score 1-20. Audit available.

MTH 11B Fundamentals of Arithmetic II 2.00 Use of fractions and decimals to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisite: Pre-Algebra COMPASS score 1-20 or successful completion of MTH 10. Audit available.

MTH 11C Fundamentals of Arithmetic II 2.00 Use fractions and decimals to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Prerequisite: Pre-Algebra COMPASS score 1-20 or successful completion of MTH 10 with a “C” or better. Audit available.

MTH 15 Conquering Math Anxiety 1.00 How to manage anxiety and stress about mathematics. Personal development gives instruction in methods for dealing with excessive math anxiety. Relaxation techniques are demonstrated. Includes study skills information concerning the best ways to study and to change the perception of math anxiety.

MTH 20 Basic Math (Arithmetic) 4.00 Covers fractions, decimals, percents, integer, measurements to write, manipulate, interpret, and solve application and formula problems. Introduces concepts of basic statistics. A scientific calculator is required. The TI-30X II is recommended. Prerequisite: (ABE 0750 or placement into MTH 20) and (placement into RD 80 or ESOL 250).

MTH 20B Basic Math 4.00 Use fractions, decimals, percents, integer arithmetic, measurements, and geometric properties to write, manipulate, interpret and solve application and formula problems. Introduces concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 21C Percentage and Statistics 1.00 Use fractions, decimals, and percents to write, manipulate, interpret and solve applications and formulas. Introduce concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.
MTH 22C Measurements 1.00 Use both English and metric measurements, conversions, temperature, and to write, manipulate, interpret, and solve applications and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 23C Introduction to Geometry 1.00 Use geometric properties to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 24C Pre-Algebra 1.00 Use integer arithmetic to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 25C Fractions 1.00 Use fractions to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 26C Decimals 1.00 Use decimals, to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 27C Applications in Mathematics 1.00 Use fractions, decimals, percents, integer arithmetic, and measurements to write, manipulate, interpret and solve applications and formulas. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 30 Business Mathematics 4.00 Application of arithmetic to a variety of problems found in the business field, including simple and compound interest, annuities, payroll preparation, pricing, invoice preparation, trade discounts, taxes, and depreciation. Scientific calculator required. Prerequisites: MTH 20; (RD 80 or ESOL 250). Audit available.

MTH 60 Introductory Algebra - First Term 4.00 Introduction to algebraic concepts and processes with a focus on linear equations and inequalities in one and two variables. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: MTH 20 and RD 80 (or ESOL 250). Audit available.

MTH 61 Introductory Algebra - Part I 3.00 Introduces algebraic concepts and processes with a focus on linear equations and inequalities in one variable. Applications, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 61 and MTH 62 to satisfy MTH 60 requirements. Prerequisite: MTH 20 AND (RD 80 or ESOL 250) Audit available.

MTH 62 Introductory Algebra - Part II 3.00 Introduces algebraic concepts and processes with a focus on linear equations in two variables, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 61 and MTH 62 to satisfy MTH 60 requirements. Must take both MTH 62 and MTH 63 to satisfy MTH 65 requirements. Prerequisite: (MTH 60 or MTH 61) AND (RD 80 or ESOL 250). Audit available.

MTH 63 Introductory Algebra - Part III 3.00 Introduces algebraic concepts and processes with a focus on functions, polynomials, and quadratic equations. Application graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 62 and MTH 63 to satisfy MTH 65 requirements. Prerequisite: (MTH 60 or MTH 62) AND (RD 80 or ESOL 250). Audit available.

MTH 65 Introductory Algebra - Second Term 4.00 Introduces algebraic concepts and processes with a focus on functions, linear systems, polynomials, and quadratic equations. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (MTH 60 or MTH 62) and (RD 80 or ESOL 250). Audit available.

MTH 70 Review of Introductory Algebra 4.00 Review of algebraic concepts and processes with a focus on linear equations and inequalities in one and two variables, functions, linear systems, properties of exponents, polynomials, and quadratic equations. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (MTH 63 or MTH 65) and (RD 80 or ESOL 250). Audit available.

MTH 75 Introduction to Formal Geometry 4.00 Topics include: inductive and deductive reasoning, geometric constructions, line and angle properties, triangle properties, polygon properties, circles, transformations, area, volume, Pythagorean Theorem, similarity, and geometric proofs. Results communicated in oral and written form. Prerequisite: MTH 60. Audit available.

MTH 84 Introduction to LaTeX 1.00 Explores the power of LaTeX for use at school or home for mathematical documents and other applications. Prerequisite: WR 115, RD 115, and MTH20 or equivalent placement test scores.

MTH 91 Intermediate Algebra Part I 2.00 Explores functions graphically and symbolically with an emphasis on function notation. Investigates functions, equations and graphs involving linear rational, and absolute value expressions. Integrates technology throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisites: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 92 Intermediate Algebra Part II 2.00 Explores functions graphically and symbolically with an emphasis on function notation. Investigates functions, equations and graphs involving quadratic, rational, and radical expressions. Integrates technology throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisites: MTH 91 and placement into WR 115. Audit available.

MTH 93 Intro to the TI Graphics Calculator 1.00 Explores the power of your programmable graphing calculator for use at school and home. The TI-89, TI 92+, or Voyage 200 graphing calculator is required. Audit available.

MTH 95 Intermediate Algebra 4.00 Explores functions graphically and symbolically with an emphasis on function notation. Investigate functions, equations, and graphs involving quadratic, rational, radical, and absolute value expressions. Technology is integrated throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 105 Explorations in Mathematics 4.00 Students engage in the discovery and exploration of selected non-traditional topics in mathematics. Possible topics include mathematics of social choice, geometry, statistics, probability, and discrete mathematics. Technology will be used where appropriate. Students communicate results in oral and written form. Prerequisites: WR 115, RD 115 and MTH 95 or equiva-
MTH 111 College Algebra 5.00: Explores relations and functions graphically, numerically, symbolically, and verbally. Examines exponential, logarithmic, polynomial, and rational functions. Investigates applications from a variety of perspectives. Graphing calculator required. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. Audit available.

MTH 111H College Algebra: Honors 5.00: An honors version of College Algebra. Explores relations and functions graphically, numerically, symbolically, and verbally. Examines exponential, logarithmic, polynomial, and rational functions. Investigates applications from a variety of perspectives. Graphing calculator required. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement.

MTH 112 Elementary Functions 5.00: Investigates trigonometric functions, equations, and identities. Examines right and oblique triangles, vectors, polar coordinates, parametric equations, and complex numbers. Explores topics graphically, numerically, symbolically, and verbally. Graphing calculator required. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. Audit available.

MTH 211 Foundations of Elementary Math I 4.00: Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Topics emphasized are problem solving, patterns, sequences, set theory, logic, numeration systems, number bases, arithmetic operations, and number theory. Various manipulative and problem solving strategies are used. Prerequisite: MTH 95 or higher, and WR 115 and RD 115 or equivalent placement test scores. Audit available.

MTH 212 Foundations of Elementary Math II 4.00: Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Various manipulative and problem solving approaches are used to explore rational numbers (fractions, decimals, percents), integers, the set of irrational numbers, the set of real numbers, and simple probability and statistics. Prerequisite: MTH 211 and its prerequisite requirements. Audit available.

MTH 213 Foundations of Elementary Math III 4.00: Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Various manipulative and problem solving approaches are used to explore informal geometry, transformational geometry, and measurement systems. Prerequisite: MTH 211 and its prerequisite requirements. Audit available.

MTH 241 Calculus for Management, Life and Social Science 4.00: Includes limits, continuity, derivatives, and integrals. Investigates applications from science, business, and social science perspectives. Graphing calculator required. Prerequisite: MTH 111 or MTH 111B or MTH 111C. Audit available.

MTH 243 Statistics I 5.00: Introduces displaying data with graphs, numerical descriptions of data, producing data, elementary probability, probability distributions, confidence intervals and significance testing. Investigates applications from science, business, and social science perspectives. Graphing calculator required. Prerequisite: MTH 111 or MTH 111B or MTH 111C, and placement into WR 121. Audit available.

MTH 244 Statistics II 4.00: Topics include confidence interval estimation; tests of significance including z-tests, t-tests, ANOVA, and chi-square; and inference for linear regression. Applications are investigated from science, business, and social science perspectives. TI graphing calculator with advanced statistical programs required and/or computer software, see instructor. Prerequisites: MTH 243 and its prerequisite requirements. Audit available.

MTH 251 Calculus I 4.00: Includes limits, continuity, derivatives and applications of derivatives. Graphing calculator required. Prerequisite: MTH 111 or MTH 111B or MTH 111C, RD 115, and WR 115, or equivalent placement. Audit available.

MTH 252 Calculus II 5.00: Includes antiderivatives, the definite integral, topics of integration, improper integrals, and applications of integration. Graphing calculator required. Prerequisite: MTH 251 and its prerequisite requirements. Audit available.

MTH 253 Calculus III 5.00: Includes infinite sequences and series (emphasis on Taylor series), an introduction to differential equations, and vectors in three space. Graphing calculator required. Prerequisite: MTH 252 and its prerequisite requirements. Audit available.

MTH 254 Vector Calculus I 5.00: Includes multivariate and vector-valued functions from a graphical, numerical, and symbolic perspective. Applies integration and differentiation of both types of functions to solve real-world problems. Graphing calculator required. Prerequisite: MTH 253 and its prerequisite requirements. Audit available.

MTH 256 Differential Equations I 5.00: Includes a variety of differential equations and their solutions, with emphasis on applied problems in engineering and physics. Differential equations software will be used. Students communicate results in oral and written form. Graphing calculator required. Prerequisite: MTH 253 and its prerequisite requirements. Audit available.

MTH 261 Applied Linear Algebra I 5.00: Surveys linear algebra with some applications, including linear systems, vectors, and vector spaces, including eigenspaces. Graphing calculator required. Prerequisite: TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 253 and its prerequisite requirements. Audit available.

MUC 101 Commercial Music Theory I 3.00: Covers chord types and scales, and their proper spellings. Practice dictation practice includes music copying. Audit available.

MUC 102 Commercial Music Theory II 3.00: Covers functional harmony and altered chords, especially dominants. Focuses on chord progressions presented aurally and analyzed in reference to popular tunes, and scalular techniques to include melody writing with emphasis on jazz, rock and other commercial rhythms. Basic tune forms are analyzed. Must have prerequisite or instructor permission. Prerequisite: MUC 101. Audit available.

MUC 103 Commercial Music Theory III 3.00: Covers preliminary score layout. Introduces harmonizing and blocking melodies and transposition, stressing craft and execution. Continue dictation adding elements of melodic and harmonic transcription. Must have prerequisite or instructor permission. Prerequisite: MUC 102. Audit available.

MUC 120A Sight Singing and Ear Training I 1.00: Develops ability to use the ear accurately to discern the quality of intervals, rhythms, harmonies and melodies, and to intone rhythms. Musical samples are transcribed by ear to include melody, rhythm, and harmony. Audit available.

MUC 120B Sight Singing and Ear Training II 1.00: Develops the ability to use the ear accurately to discern the quality of intervals, rhythms, harmonies and melodies, and to intone rhythms. Musical samples are transcribed by ear to include melody, rhythm, and harmony. Must have prerequisite or instructor permission. Prerequisite: MUC 120A. Audit available.

MUC 120C Sight Singing and Ear Training III 1.00: Develops the ability to use the ear accurately to discern the quality of intervals, rhythms, harmonies and melodies, and to intone rhythms. Musical samples are transcribed by ear to include melody, rhythm, and harmony. Must have prerequisite or instructor permission. Prerequisite: MUC 120B. Audit available.

MUC 123 Electronic Media I 2.00: Covers computer based recording, synthesis and notation for the composer/arranger. Includes fundamentals in Midi, sequencing, sampling, basic signal processing, and practical production skills using current digital technology. Write original material during lab sessions.
MUC 124 Electronic Media II 2.00 Covers computer based recording, synthesis and notation for the composer/arranger. Includes fundamentals in MIDI, sequencing, sampling, basic signal processing, and practical production skills using current digital technology. Write original material during labs sessions. Audit available.

MUC 125 Electronic Media III 2.00 Covers computer based recording, synthesis and notation for the composer/arranger. Includes fundamentals in MIDI, sequencing, sampling, basic signal processing, and practical production skills using current digital technology. Write original material during lab sessions. Must have prerequisite or instructor permission. Audit available.

MUC 130A Rhythm Training I 1.00 Develops basic skills of rhythmic sight reading. Audit available.

MUC 130B Rhythm Training II 1.00 Develops basic skills of rhythmic sight reading. Audit available.

MUC 130C Rhythm Training III 1.00 Develops basic skills of rhythmic sight reading. Audit available.

MUC 140A Group Piano I 2.00 Introduces the basics of piano technique with correct observance of pitch, clef, meter, phrasing and interpretation in a contemporary style. Audit available.

MUC 140B Group Piano II 2.00 Advanced beginner to intermediate instruction for piano. Develops practice skills, sight reading and technical form. Also covers music fundamentals, harmony, notation, improvisation, and stylistic nuances. Audit available.

MUC 143 Group Percussion 2.00 Uses rhythms from rock, jazz, R&B, funk and Latin music to cover basic techniques of performance on percussion instruments. Audit available.

MUC 144 Contemporary Singing 2.00 Covers basic technical skills necessary to develop individual ability in solo or ensemble performance. CDA: Additional lab hours may be required. Audit available.

MUC 145A Group Guitar/Bass I 2.00 Beginning instruction for guitar and bass. Includes basic chords, strums, patterns and song forms. Audit available.

MUC 145B Group Guitar/Bass II 2.00 Advanced beginner to intermediate instruction for guitar and bass. Includes moveable chords, scales, patterns, and song forms. Also, open tuning and slide guitar, basic soloing and accompaniment techniques. CDA: Additional lab hours may be required. Audit available.

MUC 145C Group Guitar/Bass III 2.00 Intermediate to advanced intermediate instruction for guitar and bass. Includes chord studies, chord progressions, scales, basic chord substitution. Also, open tuning and slide guitar, soloing and accompaniment techniques.

MUC 150A Keyboard Harmony I 1.00 Piano keyboard performance of simple keyboard skills introducing scales, cadences, melody harmonization, simple accompaniment patterns and transposition as they apply to principles studied in Commercial Music Theory I. Audit available.

MUC 150B Keyboard Harmony II 1.00 Piano keyboard performance of simple keyboard skills introducing scales, cadences, melody harmonization, simple accompaniment patterns and transposition as they apply to principles studied in Commercial Music Theory II. Must have prerequisite or instructor permission. Prerequisite: MUC 150A. Audit available.

MUC 150C Keyboard Harmony III 1.00 Piano keyboard performance of simple keyboard skills introducing scales, cadences, melody harmonization, simple accompaniment patterns and transposition as they apply to principles studied in Commercial Music Theory III. Must have prerequisite or instructor permission. Prerequisite: MUC 150B. Audit available.

MUC 152A Contemporary Arranging: Settings for Originals and Covers I 3.00 Develops skills in the tonal placement of sound required for orchestration and arrangement for various styles of music and sizes of musical groups. Focuses on individual instruments and the scoring of each section in the jazz idiom. Includes instrumental and vocal transposition, ranges, harmony, voicing, form, counterpoint, styles, introductions, modulations, interludes, endings, harmonic progression and experimental materials. Audit available.

MUC 152B Contemporary Arranging: Settings for Originals and Covers II 3.00 Develops skills in the tonal placement of sound required for orchestration and arrangement for various styles of music and sizes of musical groups. Focuses on individual instruments and the scoring of each section in the jazz idiom. Includes instrumental and vocal transposition, ranges, harmony, voicing, form, counterpoint, styles, introductions, modulations, interludes, endings, harmonic progression and experimental materials. Must have prerequisite or instructor permission. Prerequisite: MUC 152A. Audit available.

MUC 152C Contemporary Arranging: Settings for Originals and Covers III 3.00 Develops skills in the tonal placement of sound required for orchestration and arrangement for various styles of music and sizes of musical groups. Focuses on individual instruments and the scoring of each section in the jazz idiom. Includes instrumental and vocal transposition, ranges, harmony, voicing, form, counterpoint, styles, introductions, modulations, interludes, endings, harmonic progression and experimental materials. Must have prerequisite or instructor permission. Prerequisite: MUC 152B. Audit available.

MUC 154A Band Performance Workshop 2.00 Involves selection, rehearsals, and performance in a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Develops rehearsal and presentation skills. Audit available.

MUC 154B Band Performance Workshop 2.00 Involves selection, rehearsals, and performance in a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Further develops rehearsal and presentation skills. Students are involved with setup and flow of performance. Audit available.

MUC 154C Band Performance Workshop III 2.00 Involves selection, rehearsals, and performance in a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Develops rehearsal and presentation skills. Students are allowed to “front” band and submit original material. Audit available.

MUC 155 Introduction to Improvisation 2.00 Introduces the beginning improviser to the art of soloing. On the most basic level common staples of the jazz solo are presented and practiced. Simple tunes featuring these staples are used as “vehicles” for soloing. Enrollment open for this class. Audit available.

MUC 155A Improvisation I 2.00 Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic riffs. Includes harmonic construction of all styles of jazz and ear training. By the end of the sequence, students solo against song form. Audit available.

MUC 155B Improvisation II 2.00 Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic riffs. Includes harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form. Audit available.

MUC 155C Improvisation III 2.00 Vocal and instrumental improvisation. Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic riffs. Focuses on harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form. Audit available.

MUC 164 Survey of the Music Industry 1.00 Provides overview of career options in the music industry. Focuses on making a reasonable and informed choice as to a career in music. Audit available.

MUC 165 Business for the Musician 1.00 Instructs prospective music-related business owners, such as bands or private teachers, how to initiate, organize and operate a successful small business. Included are promotion, marketing, and record-keeping. Audit available.
MUC 166 Songwriting and Music Publishing 2.00 Covers the basic forms of popular music songwriting. Includes the opportunity to create songs, individually and in collaboration with others. Includes the business aspects of music publishing and how they affect the songwriter. May be taken three times for credit. Audit available.

MUC 167 The Music Business: Career Opportunities and Self Defense 2.00 Covers what you need to know to pursue a career in music and the music business. Audit available.

MUC 222 Introduction to Recording Technologies 2.00 Course familiarizes students with the terminology, equipment and basics used in the recording industry. Prepares students for the technical requirements of the Recording Technologies courses. Audit available.

MUC 223 Studio Recording Technology I 3.00 Fundamental skills in audio engineering including a mixture of theory and practical application of current recording technology. Includes fundamental acoustics, microphone placement, editing, multi-track recording, mix-down, signal processing, MIDI, and time code synchronization. Focuses on commercials, music recording and sound tracks for visual media. Prerequisite: MUC 222. Audit available.

MUC 224 Studio Recording Technology II 3.00 Fundamental skills in audio engineering including a mixture of theory and practical application of current recording technology. Includes fundamental acoustics, microphone placement, editing, multi-track recording, mix-down, signal processing, MIDI, and time code synchronization. Focuses on commercials, music recording and sound tracks for visual media. Prerequisite: MUC 223. Audit available.

MUC 225 Studio Recording Technology III 3.00 Fundamental skills in audio engineering including a mixture of theory and practical application of current recording technology. Includes fundamental acoustics, microphone placement, mixing, multi-track recording, mix-down, signal processing, MIDI, and time code synchronization. Focuses on commercials, music recording and sound tracks for visual media. Prerequisite: MUC 224. Audit available.

MUC 226 Digital Recording 1 3.00 Covers digital technology used in the recording industry. Principle studies are A/D-D/A conversions, graphic editing, plug in effects programming and data handling. Prerequisites: MUC 225. Audit available.

MUC 227 Digital Recording 2 3.00 Second course in a three part series. Focuses on mixing, automation and synchronization. Both graphic and console methods will be practiced. Lectures focus on theory, musical qualities and functions of both. Prerequisite: MUC 226. Audit available.

MUC 228 Digital Recording 3 3.00 Third part of a three part series. Focuses on competencies in varied applications such as audio for video and picture. Lectures focus on musical requirements, theory, and practical approaches to field related tasks. Labs will consist of practical applications of all previously learned artistic and command skills. Prerequisite: MUC 227. Audit available.

MUC 234 Income Tax Preparation for Musicians 1.00 Prepare federal and state individual returns, and introduces partnership and corporate taxation. Includes basics of record-keeping and financial planning. Audit available.

MUC 280A Cooperative Education: Vocational Music 2.00 Develops individual music performance, writing or recording skills in a department approved work setting. Department permission required. Corequisite: MUS 280B. Audit available.

## APPLIED MUSIC

MUP 100 Individual Lessons for Non-majors 1.00 Includes individual instruction in piano, organ, voice and instruments of the band and orchestra. Can be taken for a maximum of six credits. Credit fee is paid to the college. Lesson fees are variable and paid directly to instructor. Audit available.

MUP 171 Applied Piano 1.00
MUP 172 Applied Harpsichord 1.00
MUP 173 Applied Organ 1.00
MUP 174 Applied Voice 1.00
MUP 175 Applied Violin 1.00
MUP 176 Applied Viola 1.00
MUP 177 Applied Cello 1.00
MUP 178 Applied Bass 1.00
MUP 179 Applied Harp 1.00
MUP 180 Applied Guitar 1.00
MUP 181 Applied Flute 1.00
MUP 182 Applied Oboe 1.00
MUP 183 Applied Clarinet 1.00
MUP 184 Applied Saxophone 1.00
MUP 185 Applied Bassoon 1.00
MUP 186 Applied Trumpet 1.00
MUP 187 Applied French Horn 1.00
MUP 188 Applied Trombone 1.00
MUP 291 Applied Percussion 1.00

## MUSIC

MUS 101 Introduction to Music (Basic Materials) 3.00 Introduces the basic components of music such as rhythm, melody, harmony and structure. Includes basic note reading and building of music literacy skills. No prior music experience required. Audit available.

MUS 105 Music Appreciation 3.00 Provides an introduction to understanding symphonic music in the vocal and instrumental genres from the ancient period through the contemporary music of our time. Class will be presented using a multi-media format. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 106 Opera Appreciation 3.00 Covers musical and dramatic analysis of opera. Read about and listen to operas dating from 1600 to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 108 Music Cultures of the World 3.00 Examines musical cultures throughout the world with attention to cultural contexts and musical styles,
MUS 110 Fundamentals of Music 4.00 Covers the basic concepts of music: pitch, rhythm, meter, intervals, modes, scales, harmony and music notation. Introduces the science of sound and music theory terminology. Begins development of musical performance skills through singing, clapping and performance on the piano keyboard. Also includes basic aural skills. Course intended for non-music majors and to prepare students for further music theory study. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 111 Music Theory I (part one) 3.00 Covers music theory as exhibited in the works of the great composers of the 17th and 18th centuries. Includes notation, pitch, meter, tonality, modality, harmony and diatonic function. Basic music analysis focusing on harmonic function and figured bass notation. Includes written composition. Part one of three-term sequence. MUS 111C is a concurrent requirement for music scores, and MUS 110. Audit available.

MUS 111C Music Theory I: Sight Singing and Ear Training (part one) 1.00 Focuses on the development of skills related to the notation, performance and aural recognition of music. Includes meter, rhythm, diatonic melodies, triads, solfeggio, intervals, and harmonic function. Part one of three-term sequence. Corequisite: MUS 111. Audit available.

MUS 112 Music Theory I (part two) 3.00 Continues work from MUS 111. Focuses on four-part harmony and common practice period voice leading. Includes figured bass realization, harmonic analysis and written composition. Part two of three-term sequence. Concurrent enrollment in MUS 112C is required for music transfer students. Prerequisites: MUS 111 and its prerequisite requirements. Audit available.

MUS 112C Music Theory I: Sight Singing and Ear Training (part two) 1.00 Continues development of skills from MUS 111C. Includes harmonic implications in melody, complex rhythms, beat subdivisions and four-part harmony. Introduces melodic chromaticism, extended harmony and phrase relationships. Part two of three-term sequence. Recommended for music transfer students. Corequisite: MUS 112A. Prerequisite: MUS 111C. Corequisite: MUS 112. Audit available.

MUS 113 Music Theory I (part three) 3.00 Continues work from MUS 112. Introduction to chromatic harmony as exhibited through tonization and harmonic modulation. Covers melodic structure and basic Schenkerian reduction technique. Also includes large-scale form and analysis and written composition. Meets arts and humanities sequence requirement for Associate of Arts Oregon Transfer degree. Part three of three-term sequence. Concurrent enrollment in MUS 113C recommended for music transfer majors. Prerequisite: MUS 112 and its prerequisite requirements. Audit available.

MUS 113C Music Theory I: Sight Singing and Ear Training (part three) 1.00 Continues development of skills learned in MUS 112C. Includes two-part melodic and rhythmic notation. Introduces secondary function and diatonic modulation. Part three of three-term sequence. Corequisite: MUS 113. Prerequisite: MUS 112C. Corequisite: MUS 113. Audit available.

MUS 125 Guitar Clinic and Workshop 2.00 Focus on guitar technique as applied to classical, acoustic and electric guitar playing. Topics include warm-ups, development of finger dexterity, fretting hand strength/endurance, efficiency and accuracy, and good tone production. Overview of important guitarists and teaching methods. Also includes fretboard theory and live performance. Prerequisite: MUS 191. Audit available.

MUS 131 Group Vocal 1.00 Basic technique and theory of vocal proficiency necessary to develop individual ability in solo or ensemble settings. Students will learn to apply topics covered (including breath support, projection, phrasing, musical styles) to their own voices in solo repertoire. Audit available.

MUS 153A Musical Theatre Vocal 1.00 Selection by audition to cast of musical theatre production. Evening rehearsals during term, performances at conclusion of term. Audit available.

MUS 153B Musical Theatre Vocal 2.00 Selection by audition to cast of musical theatre production. Evening rehearsals during term, performances at conclusion of term. Audit available.

MUS 153C Musical Theatre Vocal 3.00 Selection by audition to cast of musical theatre production. Evening rehearsals during term, performances at conclusion of term. Audit available.

MUS 158 Chamber Ensemble 1.00 Provides opportunity for instrumentalists and vocalists to form small ensembles (i.e. solo, duet, trio, quartet, etc.). Ensembles rehearse individually and participate in performance. Requires the ability to read music. Audit available.

MUS 170 Music and Computers 2.00 Introduction to computer technology for musicians and musicians and music major. Focuses on software-based music composition and notation. Introduces electronic music composers and compositional techniques. Basic knowledge of computers is recommended. Prerequisite: MUS 110 or MUS 111. Audit available.

MUS 190 Introduction to Piano 2.00 Group instruction in piano performance. Development of basic piano skills and the introduction to related musical concepts. Focus given to basic keyboard technique, note-reading, rhythm, chords and repertoire performance. No previous experience required. Not designed for Music majors. Audit available.

MUS 191 Class Guitar II 2.00 Group instruction in guitar. Continues material presented in MUS 191. Topics include reading notes up to the fifth position, advanced left hand technique, chord structure, flamenco technique and music theory as it applies to the guitar. Includes both solo and ensemble performance. More in-depth study of the historical origins of the guitar, the repertoire and its major players. Prerequisite: MUS 191 or knowledge of first position note reading. Audit available.

MUS 191P Class Piano II 2.00 Group instruction in piano performance. Intent of course is the development of piano proficiency skills. Focus given to basic keyboard technique, score reading and performance, sight-reading, harmonization, accompanying, and transposition. Designed for music majors but is available to all students. No previous experience required. Audit available.

MUS 192 Class Guitar II 2.00 Group instruction in guitar. Continues material presented in MUS 191. Topics include reading notes up to the fifth position, alternate tunings, altered chords, creating original arrangements and music theory as it applies to the guitar. Includes both performing as a soloist and as a member of an ensemble. Detailed study of twentieth century guitar practice and the influence of popular styles. Prerequisite: MUS 191. Audit available.

MUS 193 Class Guitar III 2.00 Group instruction in guitar. Continues material presented in MUS 192. Topics include reading notes up to the twelfth position, alternate tunings, altered chords, creating original arrangements and music theory as it applies to the guitar. Includes both performing as a soloist and as a member of an ensemble. Detailed study of twentieth century guitar practice and the influence of popular styles. Prerequisite: MUS 192. Audit available.

MUS 193P Class Piano III 2.00 Continues group instruction in piano performance covered in MUS 192P. Intent of course is the development of piano proficiency skills. Focus given to basic keyboard technique, score reading and performance, sight-reading, harmonization, accompanying, and transposition. Designed for music majors but is available to all students. Prerequisite: MUS 192P. Audit available.

MUS 195 Symphonic Band 1.00 Large conducted ensemble for brass, woodwind and percussion
MUS 201 Introduction to Music and Its Literature 3.00 Covers music of the Medieval, Renaissance and Baroque eras of music history. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 202 Introduction to Music and Its Literature 3.00 Covers music of the Classic and Romantic eras of music history. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 203 Introduction to Music and Its Literature 3.00 Covers music of the post-Romantic era and the 20th century. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 204 Music of the Western World 4.00 Designed primarily for music transfer students and those with the ability to read music. Provides a survey of the music of the western world. Major periods, forms, styles, and music scores from the ancient period through the contemporary music of our time will be covered. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 205 Introduction to Jazz History 3.00 Covers the 90-year history of jazz, a truly American art form. Examines and analyzes eras, styles, and significant artists. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 206 Introduction to the History of Rock Music 3.00 Examines rock music's roots and development, its innovators and significant events through a cultural as well as musical perspective. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 207 Introduction to the History of Folk Music 3.00 Provides the historic development and the musical and textural characteristics of American folk music, from its Anglo-Celtic, Hispanic, African and Native American roots to the present, including country music, bluegrass, blues, border music, religious and other ethnic music. Discusses folk revivals and the significance of songs in terms of the social norms of the time, including the interaction of folk music with popular music. Presented using a multimedia format. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available.

MUS 208 African-American Music 3.00 Traces the spiritual and all of its counter-parts to gospel music back to its African beginnings. Includes certain musical aspects of various African, Caribbean and South American cultures. See how African-American music is related to these cultures and how the inception of music in the African-American tradition occurred. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 209 African-American Music 3.00 Examines the progression of African-American music to the blues. Includes the elements of the blues and the various historical avenues in which it has developed. Study how the blues has inspired and constructed the format of today's music. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 210 African-American Music 3.00 Examines present-day jazz art-form through its progression from the blues. Study the construction of jazz and its various formats, appreciate of the art-form through direct exposure to the music, receive historical background and examine its contribution to the international field of music. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 211A Music Theory II 3.00 Continues work on skills from in Music Theory I adding compositional techniques associated with the 20th century, as well as introducing tonal counterpoint and formal musical analysis. Prerequisite: MUS 113. Audit available.

MUS 211B Music Theory II: Keyboard Harmony 1.00 Piano keyboard performance of simple keyboard skills (scales, cadences, melody harmonization, simple accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Corequisite: MUS 211A. Audit available.

MUS 212A Music Theory II: Keyboard Harmony 1.00 Continues development of piano keyboard skills (scales, cadences, melody harmonization, simple accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Prerequisite: MUS 211B. Corequisite: MUS 212A. Audit available.

MUS 213A Music Theory II 3.00 Continues to work on skills from Music Theory I adding compositional techniques associated with the 20th century. Includes tonal counterpoint and formal musical analysis. Prerequisite: MUS 212A. Audit available.

MUS 213B Music Theory II: Keyboard Harmony 1.00 Continues development of piano keyboard skills (scales, cadences, melody harmonization, simple accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Prerequisite: MUS 212B. Corequisite: MUS 213. Audit available.

MUS 214 Music of Broadway 3.00 A historical overview of the music of Broadway. Also includes musical elements and aural skill development. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 220 Chorus 1.00 Directed rehearsal and performance of music for the larger general chorus of mixed voices--soprano, alto, tenor, bass. Chorus is open to all students who desire to sing. No audition is required. Music selected will be keyed to the ability of the group. Purpose is to develop as high a level of artistic choral singing as is possible within the capability of the group. Audit available.

MUS 221 Chorus: Chamber Choir 1.00 Develop a high level of artistic choral singing through directed rehearsal and performance of music for the smaller choir of mixed voices--soprano, alto, tenor, bass. Audition required. Audit available.

MUS 240 Music Composition 2.00 Introduces music composition with focus on 20th and 21st century compositional techniques and materials. Includes composition of chamber and concert works using topics and methods covered with the goal of compiling a portfolio of original works. Specific topics covered will vary by term. Course may be taken up to three times for credit. Prerequisite: MUS 111. Audit available.
and clinical practice. Case exemplars include children with asthma, adolescents with a mood disorder, adults with type 2 diabetes, and older adults with dementia. The course includes classroom and clinical learning experiences. Prerequisite: NRS 110. Co-requisite: NRS 230 and NRS 232.

NRS 112 Foundations of Nursing in Acute Care I 6.00 Introduces the learner to assessment and common interventions (including relevant technical procedures) for care of patients across the life span who require acute care, including normal childbirth, Disease/illness trajectories and their translation into clinical practice guidelines and/or standard procedures are considered in relation to their impact on providing culturally sensitive, client-centered care. Includes classroom and clinical learning experiences. Prerequisite: NRS 111. Co-requisite: NRS 231 and NRS 233.

NRS 221 Chronic II 9.00 This course builds on foundations of nursing in Chronic Illness I. Chronic Illness II expands the student’s knowledge related to family care giving, symptom management and end of life concepts. These concepts are a major focus and basis for nursing interventions with patients and families. Ethical issues related to advocacy, self determination, and autonomy are explored. Complex skills associated with the assessment and management of concurrent illnesses and conditions are developed within the context of client and family preferences and needs. Skills related to enhancing communication and collaboration as a member of an interdisciplinary team are further explored. Exemplars include patients with chronic mental illness and addictions as well as other chronic conditions and disabilities affecting functional status and family relationships. The course includes classroom and clinical learning experiences. Prerequisite: Completion of first year Nursing courses.

NRS 222 Acute Care II 9.00 This course builds on Nursing in Acute Care I, focusing on more complex and/or unstable patient care conditions, some of which may result in death. These patient care conditions require strong noticing and rapid decision making skills. Evidence base is used to support appropriate focused assessments, and effective, efficient nursing interventions. Life span and developmental factors, cultural variables, and legal aspects of care frame the ethical decision-making employed in patient choices for treatment or palliative care with the acute care setting. Case scenarios incorporate prioritizing care needs, delegation and supervision, and family and patient teaching for either discharge planning or end-of-life care. Exemplars include acute conditions affecting multiple body systems. Includes classroom and clinical learning experiences. Prerequisite: NRS 221.

NRS 224 Integrative Practicum I 9.00 This course is designed to formalize the clinical judgments, knowledge and skills necessary in safe, registered nurse practice. Faculty/Clinical Teaching Association/Student Triad Model provides a context that allows the student to experience the nursing work world in a selected setting, balancing demands of job and lifelong learner. Analysis and reflection throughout the clinical experience provide the student with evaluate criteria against which they can judge their own performance and develop a practice framework. Includes seminar, self-directed study and clinical experience. Prerequisite: NRS 222.

NRS 230 Clinical Pharmacology I 3.00 This course introduces the theoretical background that enables students to provide safe and effective care related to drugs and natural products to persons throughout the lifespan. It includes the foundational concepts of principles of pharmacology, nonopiod analgesics, and antibiotics, as well as additional classes of drugs. Students will learn to make selected clinical decisions in the context of nursing regarding using current, reliable sources of information, understanding of pharmacokinetics and pharmacodynamics, developmental physiologic considerations, monitoring and evaluating the effectiveness of drug therapy, teaching persons from diverse populations regarding safe and effective use of drugs and natural products, intervening to increase therapeutic benefits and reduce potential negative effects, and communicating appropriately with other health professionals regarding drug therapy. Drugs are studied by therapeutic or pharmacological class using an organized framework. Prerequisite: NRS 110. Co-requisite: NRS 111 and NRS 232.

NRS 231 Clinical Pharmacology II 3.00 This sequel to Clinical Pharmacology I continues to provide the theoretical background that enables students to provide safe and effective nursing care related to drugs and natural products to persons throughout the lifespan. Students will learn to make selected clinical decisions in the context of nursing regarding using current, reliable sources of information, monitoring and evaluating the effectiveness of drug therapy, teaching persons from diverse populations regarding safe and effective use of drugs and natural products, intervening to increase therapeutic benefits and reduce potential negative effects, and communicating appropriately with other health professionals regarding drug therapy. The course addresses additional classes of drugs and related natural products not contained in Clinical Pharmacology I. Prerequisite: NRS 111, NRS 230 and NRS 232. Corequisite: NRS 112 and NRS 233.

NRS 233 Pathophysiological Processes I 3.00 This course introduces pathophysiological processes that contribute to many different disease states across the lifespan and human responses to those processes. It includes the foundational concepts of cellular adaption, injury, and death; inflammation and tissue healing; fluid and electrolyte imbalances; and physiologic response to stressors, as well as additional pathophysiological processes. Students will learn to make selective clinical decisions in the context of nursing regarding using current, reliable sources of pathophysiological information, selecting and interpreting focused nursing assessments based on knowledge of pathophysiological processes, teaching persons from diverse populations regarding pathophysiological processes, and communicating with other health professionals regarding pathophysiological processes. Prerequisite: NRS 110. Co-requisite: NRS 111 and NRS 230.

NRS 232 Pathophysiological Processes II 3.00 This sequel to Pathophysiological Processes I continues to explore pathophysiological processes that contribute to disease states across the lifespan and human responses to those processes. Students will learn to make selected clinical decisions in the context of nursing regarding using current, reliable sources of pathophysiology information, selecting and interpreting focused nursing assessments based on knowledge of pathophysiological processes, teaching persons from diverse populations regarding pathophysiological processes, and communicating with other health professionals regarding pathophysiological processes. The course addresses additional pathophysiological processes not contained in Pathophysiological Processes I. Prerequisite: NRS 111, NRS 230 and NRS 232. Co-requisite: NRS 112 and NRS 231.

OPHTHALMIC MEDICAL TECHNOLOGY

OMT 102 Pharmacology/Eye Disease I 2.00 Studies major ocular diseases and related structures integrated with symptomology and treatment. Introduction of ophthalmic drugs. Audit available.

OMT 103 Pharmacology/Eye Disease 2 2.00 Continuation of OMT 102. Details major classifications of ophthalmic drugs, mechanism of action, side effects, first aid techniques for acute ophthalmic drug reactions. Explores the relationship of ocular pathology and medications used to treat. Prerequisite: OMT 102. Audit available.

OMT 104 Ophthalmic Office Procedures 3.00 Utilizes techniques to obtain medical and ophthalmic history, transcription of information into the medical chart, and common terms/abbreviations used in history taking. Covers front office techniques, including basic functions of a computer in the medical office. Develops skills needed to obtain accurate patient visual acuity.

OMT 106 Introduction to Clinical Skills 3.00 Covers basic test principles and techniques including tangent screen and automated visual fields, tonometry, tear function, color plates, slit lamp function, keratometry, anterior chamber depth and refraction/ refractometry theory.

OMT 115 Introduction to Ophthalmics 2.00 Introduces ophthalmology including history, roles and responsibilities of ophthalmic technicians and other allied health personnel in ophthalmology, industry standards and professional organizations. Discusses ethics of patient care, confidentiality, privacy, scope of practice and employment opportunities. Covers office efficiency, professionalism and risk management. Prerequisite: MTH 65, WR 121, and MP 111.
OMT 121 Practicum I  Discusses practicum experiences, reviews concepts of medical ethics, patient confidentiality, professionalism and communication skills. Includes blood borne pathogen training. Corequisite: OMT 231.

OMT 145 Clinical Optics 1  2.00  Presents basic optical principles and the human eye from both theoretical and practical standpoints. Explores prisms, basic dispensing, techniques for measuring types of lenses, use of the lens clock, use and maintenance of ophthalmic instruments and equipment. Audit available.

OMT 146 Clinical Optics 2  2.00  Introduces principles of retinoscopy, basic lensometry, and prisms as they relate to ocular motility. Continuation of OMT 145 Clinical Optics 1. Prerequisite: OMT 145. Audit available.

OMT 147 Clinical Optics 3  2.00  Covers theories of visual perception. Introduces basic and advanced visual aids and their application to patients with various forms of low vision. Explores concepts of depth perception and color vision. Introduces concepts of retinoscopy and refractometry. Fitting, care and patient instruction of contact lens will be mastered. Prerequisite: OMT 146.

OMT 163 Ocular Anatomy and Physiology 2.00  Relates structure and function of the human visual system. Anatomy and physiology of the eyeball, orbit, and ocular adnexa are covered. Special emphasis placed on ocular terminology. Audit available.

OMT 206 Diagnostic Procedures I  4.00  Introduces fundamentals of diagnostic testing and techniques including: applanation tonometry, slit lamp biomicroscopy, Goldmann and automated perimetry, ocular motility and advanced keratometry. Emphasizes building clinical skills.

OMT 207 Diagnostic Procedures II  4.00  Presents principles of advanced visual field examination with emphasis on Goldmann Perimetry. Covers principles and techniques of exophthalmometry, color and function tests, ocular motility and echography. Emphasizes skill development.

OMT 208 Ocular Motility 2.00  Explores ocular motility, associated testing and measurements required for evaluation. Emphasizes understanding the presentation, characteristics and history of the strabismus patient. Discusses amblyopia treatment and therapies. Audit available.

OMT 209 Surgical Assisting Procedures  4.00  Addresses the technician's role in assisting in minor office surgeries, hospital-based OR or ASC surgery and laser procedures. Include aseptic technique, scrubbing, gowning and gloving, sterilization of instruments, proper disposition of supplies/medications and regulations pertaining to surgical centers. Covers intracocular injections and refractive surgery. Audit available.

OMT 210 Advanced Diagnostics  4.00  Focuses on more advanced diagnostic procedures including electrophysiology tests, direct ophthalmoscopy, advanced color testing, advanced motility, tonometry and retinoscopy. Addresses microbiology, including specimen collection. Provides overall review in preparation for national certification examination. Audit available.

OMT 222 Practicum Second Year  4.00 Provides clinical education experience in local ophthalmic practices and health care facilities under the supervision of facility personnel. Includes exposure to working conditions and skills needed while performing ophthalmic diagnostic and therapeutic procedures. Students must enroll in this course if they are enrolled in the second year seminar. May be repeated two times for credit. Corequisite: OMT 232.

OMT 231 Seminar I  1.00  Discussions practicum experiences, review concepts of medical ethics, patient confidentiality, professionalism and communication skills. Includes blood borne pathogen training. Corequisite: OMT 121.

OMT 232 Seminar II  2.00  Reviews major professional subject areas through guest speakers and field trips. Discusses practicum experiences and employment opportunities. Students must enroll in this class if they are enrolled in second year Practicum. May be repeated two times for credit. Corequisites: OMT 222.

OMT 250 Ophthalmic Imaging 3.00  Introduces the common forms of ophthalmic imaging (CT, MRI, CCT, HRT, and wave front), ophthalmic photography (external and fundus), and fluorescein angiography. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

OS 131 10-key on Calculators 1.00  Develops 10-key skills by touch. Recommended: quality to enter Reading 115 or WR 115. Audit available.

OS 220 Business Editing Skills  4.00  Develops skills necessary for editing, transcribing, and writing memos, letters and e-mail. Emphasis: punctuation, capitalization, spelling, grammar, and word use. Recommended: Qualify for WR 121, keyboard by touch and completion of a beginning word processing class, or consent of instructor. Audit available.

OS 240 Filing and Records Management  4.00  Develop skills for indexing, coding, and cross-referencing documents to be filed. Includes requisitions and charge-outs, records transfer, various filing systems, and an overall view of the role of records management in business including electronic and image records. Recommended: RD 115; WR 115; and basic computer skills. Audit available.

OS 245 Office Systems and Procedures  4.00  Develop the skills of an administrative professional for current business practices. Use computer technology for task such as scheduling, e-mail, and faxing. Develop communication skills, telephone techniques, problem solving and analytical abilities. Analyze current trends in workplace ethics and the multi-cultural workplace. Organize and prioritize office work. Develop workplace readiness and apply job search skills for current job market. Prerequisites: CAS 216 and OS 220. Audit available.

OS 250 Creating a Virtual Office 4.00  Covers all aspects of creating an office for a virtual assistant. Develop an individual business plan, analyze office needs for furniture and equipment, create a marketing plan, establish a fee rate range, identify software requirements, plan a company website, and create a file management system. Recommended: CAS 246. Audit available.

OS 251 Virtual Office Concepts  4.00  Introduces the concepts and skills needed to become a successful virtual assistant. Covers time management, business relationships, telephone techniques, telecommuting, ethics, conflicts, stress management, separating home and office life, networking with other virtual assistants, virtual assistant associations, conducting virtual meetings, legal requirements, insurance issues, negotiating contracts, and creating business webpage and electronic portfolio. Prerequisite: OS 250 or instructor permission. Recommended: CAS 111D. Audit available.

OS 280F Cooperative Education: Administrative Assistant - Seminar 1.00  Supplement the work experience portion of cooperative education and the student's on-campus program through feedback sessions and instruction in job-related area. Prerequisite/concurrent: OS 280F. Recommended: RD 115, WR 115 and satisfactory progress through at least 15 credits of CAS/OS courses, or instructor permission required. Audit available.

OS 280G Cooperative Education: Administrative Assistant - Seminar 1.00  Supplement the work experience portion of cooperative education and the student's on-campus program through feedback sessions and instruction in job-related area. Prerequisite/concurrent: OS 280F. Recommended: RD 115, WR 115 and satisfactory progress through at least 15 credits of CAS/OS courses, or instructor permission required. Audit available.

OST 101 Occupational Skills Training  101  Provides the opportunity for students to receive instruction in a specific occupational area not normally addressed by on-going PCC programs. An individualized course in consultation with the student, PCC faculty, PCC OST coordinators, work-site supervisors, and agency representatives(s), if appropriate. An interview with an OST coordinator is required for assessment, to determine the specific occupation and to approve a suitable training site and its availability. Prerequisites are determined by the specific occupational standards.
**PHYSICAL EDUCATION**

**PE 10 Physical Education Activity Program 1.00** Independent study format allowing students to participate in a variety of activities using designated PCC facilities when classes are not scheduled. This class does not count towards PCC degrees or PCC financial aid. Check with appropriate institution or high school for transferability of this class. Consultation with instructor may be required. Recommended: signed physical examination form. Audit available.

**PE 162B MMA Combative Condition - Audit available.** credit. Recommended: PE 162J or instructor approval. knowledge, application and skills in Brazilian Jiu Jitsu PE 162K Brazilian Jiu Jitsu II 1.00 required to obtain Gi by the 3rd week of class. Course techniques will be taught in the class. Students will be those who would like to learn self-defense utilizing establishing a foundational knowledge of BJJ, or for leverage awareness. Intended for those interested in Emphasizes proper technique, mobility, pressure and concepts) in a progressive skill building approach. PE 162J Brazilian Jiu Jitsu 1.00 improves fitness, health, and overall wellness through structured group fitness classes and individualized cardiorespiratory exercise. Covers knowledge and skills needed to perform safe and proper group and individual fitness exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Students will participate in activities that promote and emphasize improved cardiorespiratory conditioning, as well as muscle strength and endurance, flexibility, and body composition. May be repeated twice for credit. Audit available.

**PE 162G Cardio Conditioning 1.00** Introduces cardio conditioning to improve fitness, health, and overall wellness through structured group fitness classes. Covers knowledge and skills needed to perform safe and proper group and individual fitness exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Students will participate in activities that promote and emphasize improved cardiorespiratory conditioning, as well as muscle strength and endurance, flexibility, and body composition. May be repeated twice for credit. Audit available.

**PE 162J Brazilian Jiu Jitsu 1.00** Improves fitness, health and overall wellness through Brazilian Jiu Jitsu (BJJ) fitness activity. Covers basic knowledge and skills needed (such as movements, positions, and concepts) in a progressive skill building approach. Emphasizes proper technique, mobility, pressure and leverage awareness. Intended for those interested in establishing a foundational knowledge of BJJ, or for those who would like to learn self-defense utilizing ground techniques. Both Gi techniques and non-Gi techniques will be taught in the class. Students will be required to obtain Gi by the 3rd week of class. Course may be taken 3 times for credit. Audit available.

**PE 162K Brazilian Jiu Jitsu II 1.00** Expands knowledge, application and skills in Brazilian Jiu Jitsu (BJJ). Continues fundamentals and techniques explored in Brazilian Jiu Jitsu I. Course may be taken 3 times for credit. Recommended: PE 162J or instructor approval. Audit available.

**PE 162M MMA Combative Conditioning 1.00** Introduces high-intensity group exercise focusing on challenging your body in a dynamic and energetic fashion. Various activities and exercises in challenging conditions. Utilizes resistance, balance, and compounded motions to improve overall fitness to help optimize athletic performance while minimizing potential injury when performing martial arts activities. May be repeated twice for credit. Audit available.

**PE 162O Core Fitness 1.00** Improves fitness, health, and overall wellness through structured group exercise. Performs safe and proper exercises to stabilize the core muscles which include back, abdominal, hip, pelvis and lateral trunk muscles. The focus of the course and skills learned will vary by campus, term, and/or instructor. Promotes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, and/or composition with special emphasis on involvement of strong core muscles. May be repeated twice for credit. Audit available.

**PE 180A Beginning Swimming 1.00** Introduces swimming and aquatic skills to students who have very limited or no swimming skills and may be uncomfortable in the water. Audit available.

**PE 180B Intermediate Swimming 1.00** Continues the development of swimming and water safety skills. New strokes introduced include the breaststroke, sidestroke, and elementary backstroke. Deepwater skills also developed. Prerequisite: PE 180A or instructor. Audit available.

**PE 180C Advanced Swimming 1.00** Continues the development of the student’s swimming and water safety skills. Stroke refinement, and skill proficiency are stressed. New strokes introduced include the butterfly and underwater swimming. Prerequisite: PE 180B or instructor permission. Audit available.

**PE 180D Circuit Weight Training - Coed 1.00** Continues the development of student muscular strength, endurance and cardiovascular fitness. Individual programs developed to meet the student’s needs. Recommended: Beginning weight training or equivalent. Audit available.

**PE 181D Circuit Weight Training 2 - Coed 1.00** Cardiorespiratory and strength fitness are maintained/improved through the use of multiple weight and aerobic stations, based on a structured time and rotation system. Audit available.

**PE 181E Circuit Weight Training 3 - Coed 1.00** Cardiorespiratory and strength fitness are maintained/improved through the use of multiple weight and aerobic stations, based on a structured time and rotation system. Audit available.

**PE 182A Beginning Group Fitness 1.00** Promotes fitness, health, and overall wellness through structured group fitness classes. Covers knowledge and skills needed to perform safe and proper group fitness exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Emphasizes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, and/or body composition. Audit available.

**PE 182B Intermediate Group Fitness 1.00** Promotes maintenance or improvement of fitness, health, and overall wellness through structured group fitness classes. Covers knowledge and skills for performing more advanced group fitness exercises safely. The focus of the course and skills learned will vary by campus, term, and/or instructor. Emphasizes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, body composition, and skill-related fitness (balance, speed, agility, reaction time, coordination). Recommend: Beginning Group Fitness or a recent group exercise class. Audit available.

**PE 182C Beginning Fitness and Walking 1.00** Beginning level, self-paced walking programs and a variety of conditioning exercises for specific body areas. Provides instruction for integrating walking into a lifetime fitness program. Audit available.

**PE 182D Intermediate Fitness & Walking 1.00** Improves fitness through self-paced walking programs designed to increase the frequency and duration of regular workouts. Incorporate a walking program into a total fitness program for future use. Recommended:
Beginning Fitness and Walking or average fitness level. Audit available.

**PE 182E Jogging for Health 1.00** Introduces the proper running technique and provides the opportunity to improve general fitness. Running will be done on the track until student and instructor feel the student is ready to run on the road. Audit available.

**PE 182F Boot Camp 1.00** A group exercise class focusing on cardio respiratory fitness and muscular endurance using dumbbells and other equipment (physioballs, steps, etc.) This class concentrates on all key muscle groups, working toward muscle fitness and flexibility gains. This class is geared to those who enjoy high-intensity calisthenic training in a group class format. Audit available.

**PE 182G Tai Chi II 1.00** Continue the exploration of theories and movement principles introduced in Tai Chi I. Reinforce and expand upon the basic techniques to develop a solid foundation for life-long practice of Tai Chi. Recommend: PE 182S or instructor approval. Audit available.

**PE 182H Adult Fitness 1.00** Exercises and activities which strengthen and condition specific large muscle groups, improve cardiovascular fitness and flexibility. Audit available.

**PE 182I Power Yoga 1.00** Covers intermediate and advanced Hatha Yoga poses. Offers exposure to other areas of mind body fitness and an opportunity to study a selected Yoga topic in depth. Student should have prior knowledge and skill base in order to perform the Sun Salute I and II. May be repeated twice for credit. Audit available.

**PE 182J Gentle Yoga 1.00** Introduces techniques to better manage stress. Vinyasa yoga is a dynamic series of poses performed at a gentle pace and helps to reduce stress levels. Recommend for students with limited abilities and beginners who are not ready for Yoga I. Covers basic yoga philosophy, asanas, pranayama, meditation and relaxation for a holistic approach to better health and wellness. Audit available.

**PE 182K Yoga I 1.00** Introduces intermediate and advanced Hatha Yoga poses. Auditors are welcome but may require supervision. Covers basic yogic philosophy and techniques of asanas, pranayama, and meditation. Recommended: prior knowledge and skill base in order to perform the Sun Salute I and II. Audit available.

**PE 182L Yoga II 1.00** Expand knowledge, application and skill in Hatha Yoga. Offers exposure to other areas of health care and an opportunity to study a selected topic in depth. Recommended: prior class in Hatha Yoga. Audit available.

**PE 182M Adapted Physical Education 1.00** Provides individuals with acute or chronic injuries or disabilities options to improve fitness, health, and overall wellness through structured group fitness activities and individualized exercises. Covers knowledge and skills needed to perform safe and proper group and individual fitness exercises on land or in water. Introduces activities that promote and emphasize improved cardiopulmonary conditioning, muscle strength and endurance, flexibility, and body composition. Course focus varies by campus, term, and/or instructor. May be repeated twice for credit. Audit available.

**PE 182N Adapted Physical Education 1.00** Provides individuals with acute or chronic injuries or disabilities options to improve fitness, health, and overall wellness through structured group fitness activities and individualized exercises. Covers knowledge and skills needed to perform safe and proper group and individual fitness exercises on land or in water. Introduces activities that promote and emphasize improved cardiopulmonary conditioning, muscle strength and endurance, flexibility, and body composition. Course focus varies by campus, term, and/or instructor. May be repeated twice for credit. Audit available.

**PE 182P Body in Balance - Pilates Conditioning 1.00** Covers basic concepts and skills in the Pilates Method of conditioning, designed to increase core strength and stabilization, muscle balance, tone, coordination, and flexibility. Non-impact mat exercises develop whole body awareness and control, and can be modified to various fitness levels. Audit available.

**PE 182Q Self-Paced Fitness 1.00** Provides opportunity to develop regular physical fitness habits for everyday schedule. Faculty assesses student through pre/post fitness testing and required consultations. Due to independent format it is intended for those with a high level of fitness. Requires active email account. Audit available.

**PE 182R Back Care 1.00** Explore appropriate exercises, body mechanics, posture, and other techniques for prevention and relief of back pain. Audit available.

**PE 182S Tai Chi 1.00** Explore this ancient form of gentle movement which emphasizes balance, concentration and coordination. Learn traditional styles of Tai Chi in an easy to follow format. Gain strength while relieving tension and stress. Audit available.

**PE 182T Triathlon Training 1.00** Prepares student for triathlon. Focuses on endurance training and transition work for the three events. Covers basic metabolic and nutritional concepts, triathlon rules, and equipment. Requirements: Student must have their own bike and helmet (CPSC or ANSI). Student must arrange their transportation to off campus events. Audit available.

**PE 182U Pilates II 1.00** Builds on concepts and skills in the Pilates method of conditioning. Designed to continue to increase core strength and stabilization challenging the body to further its range of motion. Recommended: Pilates I or instructor permission. Audit available.

**PE 182V Sports Fitness 1.00** Covers cardiorespiratory fitness, functional training, agility, balance, and teamwork through a variety of team sports. Geared towards practicing specific sport related skills and applying learned skills in game/action environment. May be repeated twice for credit. Audit available.

**PE 182W Physical Activity for Weight Control 1.00** Introduces an independent and progressive activity program for overweight, sedentary, and/or older students. Recommended for those students who would like help with weight control through activity, and who have their doctor’s permission to begin an activity program. May be repeated twice for credit. Audit available.

**PE 182X Nia Technique 1.00** Introduces the Nia technique as a mind/body discipline that blends key elements of the martial, dance, and healing arts to provide a safe, exciting, and joyful fitness program. Applies the design and function of The Body’s Way to achieve physical, mental, emotional, and spiritual fitness and well-being. May be repeated twice for credit. Audit available.

**PE 182Y Indoor Cycling 1.00** Introduces a structured group cycling. Perform safe and proper group exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Promotes improved cardiopulmonary conditioning, muscle strength and endurance, flexibility, and body composition. May be repeated twice for credit. Audit available.

**PE 182Z Zumba Fitness 1.00** Introduces Zumba fitness to improve health and overall wellness through structured group exercise. Performs safe and proper rhythmic exercises featuring interval training sessions. The focus of the course and skills learned will vary by campus, term, and/or instructor. Promotes improved cardiopulmonary conditioning, muscle strength and endurance, flexibility, and/or body composition. May be repeated twice for credit. Audit available.

**PE 183A Hiking 1.00** Explores the basics of hiking in the Pacific Northwest. Addresses decision making skills, trip planning, first aid, safety, navigation and environmental concerns (“Leave No Trace” principles & practices). Includes required day hiking trips in order to apply learned skills in a real-time environment. Course may be taken 3 times for credit. Some experience and above average fitness recommended, but not required. Audit available.

**PE 183D Introduction to Rock Climbing 1.00** Improves fitness, health and overall wellness through rock climbing. Explores rock climbing basics including: safety, proper gear and use, movement over rock, back rock rescue, climbing etiquette and environmental concerns. Several classes during the term will meet at a local indoor rock climbing gym to practice techniques and skills. Students need to provide transportation to and from the climbing facility, as well as pay a facility use fee to the climbing facility. Facility use fee may vary. Course may be taken 3 times for credit. Audit available.

**PE 183E Beginning Tennis 1.00** Includes basic history/terminology/etiquette/strategy and skills of game. Audit available.

**PE 183F Intermediate Tennis 1.00** Builds further on the beginning techniques of the game. Emphasizes singles, doubles and competition play.
PE 183G Beginning Golf 1.00 Emphasizes fundamental techniques in the use of all clubs along with an understanding and appreciation of rules, course management and etiquette. Playing a few rounds outside of class is required. In-class time is spent on the range, putting green, pitching area and in video assessment sessions. Audit available.

PE 183H Intermediate Golf 1.00 Emphasizes proper use of all clubs under variable conditions. Focuses on rules, etiquette and course management. Requires several out-of-class rounds. Audit available.

PE 183I Beginning Volkswalking 1.00 Provides independent opportunity to achieve/maintain age-related walking/fitness levels through individual walking program and active participation in Volkswalking events. Due to independent nature of course, requires weekly walking log reports via current email account. Audit available.

PE 183J Intermediate Volkswalking 1.00 Allows student to independently continue progress from beginning age-related walking/fitness levels through individual walking program and active participation in intermediate Volkswalking activities. Due to nature of course, requires weekly walking log reports via current email account. Recommended: Beginning Volkswalking or average fitness level. Audit available.

PE 183K Pickleball/Badminton 1.00 Introduces the fundamentals of pickleball and badminton. Racquet grip, hitting strokes, court position, strategy and rules of the games will be taught. Audit available.

PE 183M Advanced Volkswalking 1.00 Allows student to independently continue progress from intermediate age-related walking/fitness levels through individual walking program and active participation in advanced Volkswalking activities. Due to nature of course, requires weekly walking log reports via current email account. Recommended: Intermediate Volkswalking or above average fitness level. Audit available.

PE 183N Racquet Sports 1.00 Introduces two court games: pickleball and badminton. Several weeks spent with each game emphasizing rules, equipment, technique and strategy for both singles and doubles play. Most class time spent in game play. Audit available.

PE 183O Beginning Table Tennis 1.00 Introduces fundamentals of table tennis skills in singles/doubles, serving, smashing, forehand/backhand rules and strategy. Knowledge and recreational play emphasized. Audit available.

PE 183P Intermediate Table Tennis 1.00 Reviews strokes, strategies, and skills in singles and doubles play. Emphasizes recreational and competitive play. Recommended: Beginning table tennis skills. Audit available.

PE 183Q Advanced Table Tennis 1.00 Reviews skills, strokes and strategies used in singles and doubles play. Prepare for competition necessary to play. Recommended: Beginning, intermediate table tennis or equivalent experience. Audit available.

PE 183R Beginning Karate I 1.00 Introduces a working knowledge of the fundamental techniques employed in the art of Karate-Do. Audit available.

PE 183S Beginning Karate II 1.00 Progressive continuation of fundamental techniques employed in the art of Karate-Do. Recommended: Beginning Karate I or equivalent. Audit available.

PE 183T Aikido I 1.00 Introduces a working knowledge of the fundamental techniques employed in the art of Aikido. Audit available.

PE 183U Aikido II 1.00 Progressive continuation of the fundamental techniques employed in the art of Aikido. Audit available.

PE 183V Judo I 1.00 Introduces a working knowledge of the fundamental techniques employed in the art of Kodolan Judo. Audit available.

PE 183W Judo II 1.00 Build on knowledge and skill areas covered in Judo I. Audit available.

PE 183X Tae Kwon Do I 1.00 Introduces a working knowledge of the fundamental techniques employed in the art of Tae Kwon Do. Audit available.

PE 183Y Tae Kwon Do II 1.00 Progressive continuation of the fundamental techniques employed in the art of Tae Kwon Do I. Audit available.

PE 183Z Tae Kwon Do III 1.00 Expands knowledge of Tae Kwon Do techniques beyond the basics while strengthening self-defense skills. Covers skills required for national and international black belt certifications, as well as skills required for Olympic-style sparring referee certification through USA Taekwondo. Develops skill set required to instruct beginning Tae Kwon Do students, including the use of Korean vocabulary and classroom etiquette. Course may be taken 3 times for credit. Recommended: PE 183Y or instructor approval. Audit available.

PE 184A Beginning Skiing - Nordic 1.00 Designed to teach beginning nordic skiers proper skiing technique for groomed tracks and ungroomed snow conditions. Emphasizes speed control, efficient body movement and safety. Basics of winter survival, proper clothing, and trail etiquette are also emphasized. Audit available.

PE 184B Intermediate Skiing - Nordic 1.00 Emphasizes techniques to increase power and control in the diagonal stride, speed control in varied downhill conditions, varied turning maneuvers and beginning skating and telemark skiing. Recommended: experience in basic cross country skiing. Audit available.

PE 184C Advanced Skiing - Nordic 1.00 Designed to teach student who can perform dynamic diagonal stride and turning maneuvers to perform dynamic technique adjustments to timing, terrain changes, turning for speed control and efficiency in skating and telemark skiing. Addresses terrain changes, weather and snow conditions. Audit available.

PE 184D Beginning Skiing - Alpine 1.00 Designed to teach inexperienced skiers to link turns together with control on beginning and beginning/intermediate terrain. Introduces the fun of downhill skiing and emphasizes skills necessary to ski safely on appropriate terrain. Addresses the variables of weather and snow conditions. Audit available.

PE 184E Intermediate Skiing - Alpine 1.00 Opportunity for continued improvement in safe, enjoyable skiing for students capable of beginning wedge christies. Includes skidded parallel turns of varying radii with control on intermediate and beginning/advanced terrain. Addresses variables of weather, snow conditions, and terrain. Recommended: Beginning Alpine class or equivalent. Audit available.

PE 184F Advanced Skiing - Alpine 1.00 Ski on intermediate/advanced terrain with dynamic parallel turns. Apply edging, pressure control, rotary and balancing movements to allow confidence and versatility on steeper terrain and in varying snow conditions. Addressses variables of weather, snow conditions, and terrain. Recommended: Intermediate Alpine class or equivalent. Audit available.

PE 184G Beginning Snowboarding 1.00 Basic skills necessary for safe and fun snowboarding on appropriate terrain will be taught. Also skidded turns with control on beginning and beginning/intermediate terrain. The variables of weather and snow conditions will be addressed. Audit available.

PE 184H Intermediate Snowboarding 1.00 Continues refinement of basic skills. Students will be taught to link beginning carved turns with rhythm and control on intermediate and beginning advanced terrain. Stresses safe boarding with improvement in skill applications. The variables of weather and snow conditions will be addressed. Recommended: Beginning Snowboarding class or equivalent. Audit available.

PE 184I Alpine Ski Instructor Training 1.00 Develops skills needed to teach alpine skiing. American Teaching System progression will be taught from first day through open parallel turns. Skills concept, demonstrations, class safety and handling, movement analysis and limited practice teaching will be covered. Recommended: Advanced Alpine Skiing or equivalent. Audit available.

PE 184J Intermediate Snowboarding 1.00 Development of snowboarding skills at higher speeds, varied and difficult terrain. Includes instruction in park riding, freestyle, or powder. Emphasizes safe boarding in challenging conditions. Recommended: Intermediate snowboarding or equivalent. Audit available.
PE 185A Beginning Basketball 1.00 Provides instruction in basketball fundamentals, skills, and rules through drills and game play. Audit available.

PE 185B Intermediate Basketball 1.00 Provides instruction and opportunity to develop skills and knowledge above the basic level. Implements set plays and skills through drills and game play. Beginning basketball skills required. Audit available.

PE 185C Advanced Basketball 1.00 Emphasizes continued development of skills necessary to participate in basketball at an advanced level through game play and drills. Beginning/Intermediate basketball skills required. Audit available.

PE 185D Beginning Volleyball 1.00 Includes basic history, terminology, etiquette, strategies and skills of game. Audit available.

PE 185E Intermediate Volleyball 1.00 Builds further on the beginning techniques of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185F Advanced Volleyball 1.00 Builds further on the intermediate techniques of the game. Emphasizes team play, offensive/defensive situations and other advanced skills of spiking, team blocking and shoulder roll. Beginning volleyball and intermediate volleyball skills or instructor permission required. Audit available.

PE 185G Beginning Soccer 1.00 Basic skills, rules, and strategies for soccer will be taught. Includes dribbling, kicking, trapping, heading, throw-in, tackling, shooting, goalie play, corner kicks, goal kicks, penalty kicks, soccer formations (5-3-2, 4-3-3, 3-3-4, 2-4-4), defensive play, offensive play, rules of soccer. Beginning and intermediate soccer skills required. Audit available.

PE 185H Advanced Soccer 1.00 Presents more advanced soccer skills, strategies and rules not covered in the beginning course. Includes footwork (trapping, feinting, shielding, dribbling), tackling, volley kicking, shooting, heading, goalie keeper play, soccer formations, defense, offense, rules. Beginning and intermediate soccer skills required. Audit available.

PE 185I Flag Football 1.00 Covers skills, rules and strategies. Emphasizes individual and team offensive, defensive and kicking techniques as well as concepts of team organization and play. Considerable time is spent playing the game. Audit available.

PE 185J Softball 1.00 Emphasizes team play, strategy and individual skills. Included are: batting, running bases and sliding, throwing from outfield, throwing from infield, pitching, catching, fielding and communication. Time is divided between drills and game play. Audit available.

PE 185K Ultimate Frisbee 1.00 Provides instruction in skills, drills and game play for the game of Ultimate Frisbee. Students will learn the rules, strategy team play as well as concept of team organization. Audit available.

PE 185L Intermediate Soccer 1.00 Applies skills acquired in basic/soccer beginning play. Utilizes kicking, passing, dribbling, heading, play strategies, and goal-keeper skills. May be played on outdoor field or altered for indoor play. Audit available.

PE 185M Lacrosse - Beginning 1.00 Includes basic history, terminology, etiquette, strategies and skills of game. May be played on outdoor field or altered for indoor play during adverse weather conditions. Audit available.

PE 185N Lacrosse - Intermediate 1.00 Builds further on the beginning techniques of the game. Emphasizes team play, special situations and officiating. Includes basic history, terminology, etiquette, strategies and skills of game. May be played on outdoor field or altered for indoor play during adverse weather conditions. Prerequisite: PE 185M or instructor permission. Audit available.

PE 186A Ballet I 1.00 Develops skills and examines principles in the fundamentals of classical ballet technique. Emphasizes correct alignment, basic barre and center work, traveling steps, and ballet vocabulary. Audit available.

PE 186B Ballet II 1.00 Continues development of skills and principles of classical ballet technique beyond the beginning level. Emphasizes correct alignment, increased speed, strength, flexibility, balance, coordination, and ballet vocabulary in more challenging combinations. Recommended courses: PE 186A or D 192A or equivalent. Audit available.

PE 186C Ballet III 1.00 Continues the development of classical ballet technique at the intermediate level. Emphasizes correct alignment, increased speed, strength, flexibility, balance, coordination, stamina, and ballet vocabulary in longer, more challenging combinations. Course may be taken 3 times for credit (D 292 or PE 286 separately or in combination). Recommended: PE 186B or D 192B or equivalent. Audit available.

PE 186D Ballroom Dance 1.00 Introduces the fundamental principles of Ballroom Dance. Places emphasis on proper partnering, style, and phrasing. Focuses on elementary steps of Fox trot, Waltz, Swing, Cha-Cha, and Rumba. May be taken a total of three times for credit as either D 184 or PE 186D. Audit available.

PE 186E Ballroom Dance II 1.00 Continues the development of skills in ballroom dance at an intermediate level as well as enriching the depth of the dance technique and complexity of choreography. Focus placed on: appropriate partnering in order to lead or follow, rhythm, style, and phrasing. Dances may include: Waltz, Foxtrot, Tango, Quickstep, Rumba, Cha-Cha, Swing, Samba, Jive, and Night Club Two Step. Courses may be taken a total of three times for credit as either PE 186E or D 184B. Prerequisite: PE 186D or D 184 or instructor approval. Audit available.

PE 186F Jazz Dance I 1.00 Introduces principles and skills in the fundamentals of jazz dance technique. Emphasizes and develops correct body alignment, coordination, strength, flexibility, rhythm, and movement awareness. Includes jazz dance vocabulary and simple dance combinations. Course may be taken 3 times for credit. Audit available.

PE 186G Jazz Dance II 1.00 Continues development of jazz dance technique at the beginning/intermediate level. Emphasizes increased coordination, strength, control, flexibility, stamina, musicality, and jazz dance vocabulary in more challenging combinations. Course may be taken 3 times for credit (D 151 or PE 186G separately or in combination). Recommended courses: D 150, or PE 186F, or equivalent. Audit available.

PE 186H Jazz Dance III 1.00 Continues development of jazz dance technique at the intermediate level. Emphasizes increased strength, control, flexibility, stamina, musicality, dynamics, and jazz dance vocabulary in more challenging combinations. Course may be taken 3 times for credit (D 252 or PE 186H separately or in combination). Recommended: PE 186G or D 151 or equivalent.

PE 186I Modern Dance I 1.00 Introduces knowledge and skills in beginning modern dance technique. Includes dance fundamentals, vocabulary, and improvisation, emphasizing correct alignment, coordination, strength, and awareness of movement. Course may be taken 3 times for credit (D 192C or PE 186I separately or in combination). Audit available.

PE 186J Modern Dance II 1.00 Continues development of modern dance technique, with focus on alignment, strength, control, musicality, and dynamics. Includes expanded modern dance vocabulary, dance combinations, and improvisation. Course may be taken 3 times for credit (D 192D or PE 186J separately or in combination). Recommended courses: D 192C or PE 186J or equivalent. Audit available.

PE 186K Tap Dance I 1.00 Introduces beginning skills in tap dance. Covers basic steps, terminology, rhythms, and combinations. Audit available.

PE 186L Modern Dance III 1.00 Continues the development of Modern dance techniques at the intermediate level with focus on longer, more challenging dance phrases and performance aspects. Course may be taken a total of three times for credit as either D 292D or PE 186L. Prerequisites: PE 186J or D 192D or instructor approval. Audit available.

PE 186M Tap Dance II 1.00 Continues the development of tap dance techniques beyond the introductory level. Further develops a sense of rhythm, musicality, and tap sounds. Learn basic through intermediate levels of traditional tap steps, rhythm tap combination, and

PE 282B Professional Activities: Special Populations 2.00 Explores fitness instruction and leadership for special populations. Provides tools and knowledge needed to design fitness training programs for special populations (individuals or groups). Explores the wide range of abilities and needs in individuals within special population groups and provides appropriate exercise program modifications when necessary through observation, participation, and service learning activities. Required: Current fitness technology student or instructor permission. Audit available.

PE 283 Professional Activities: Mind-Body Disciplines 1.00 Explores fitness instruction and leadership in selected modalities within the Mind-Body Disciplines. Examines key principles of the Mind-Body Disciplines and integrates them into a conventional exercise setting. Corequisites: PE 182I, PE 182J, PE 182K, PE 182L, PE 182S, PE 182G, PE 182P, or PE 182U, or instructor permission. Required: Current Fitness Technology Student or instructor approval. Audit available.

PE 287 Professional Activities: Aquatics 1.00 Explores fitness instruction and leadership in the field of aquatics. Incorporates principles of hydrodynamics and exercise to achieve total fitness. Corequisites: PE 180A, PE 180B, PE 180C, PE 180G, PE 180H, PE 180K, or instructor permission. Required: Current Fitness Technology Student or instructor approval. Audit available.

PE 288 Professional Activities: Team Sports Training 1.00 Explores fitness instruction and leadership in team sports. Covers components of coaching team sports and skill-related physical fitness such as: progressions and techniques of practice format, sport specific drills, plyometrics, speed-agility-quickness coaching strategies and methodology. Corequisite: PE 182V, PE 185A, PE 185B, PE 185C, PE 185D, PE 185E, PE 185F, PE 185G, PE 185H, PE 185I, PE 185J, PE 185K, PE 185L, PE 185M, PE 185N, or instructor permission. Required: Current Fitness Technology Student or instructor approval. Audit available.

PE 291A Lifeguard Training 2.00 Designed to help students learn, practice, and develop the skills of water safety. Successful completion results in receiving an American Red Cross Lifeguard Training certificate.

PE 292A Water Safety Instructor 2.00 Teach swimming and water safety and further develop personal skills in these areas. Successful completion leads to receiving the American Red Cross Water Safety instructor (WSI) certificate. Students must be at least 17 years of age, skilled at intermediate swim level, and have completed pertinent Red Cross requirements. Audit available.

PHL 197 Electronic Media & The Presentation of Reality 4.00 Addresses the ethical and social issues that arise around the use of electronic media. Explores the use and potential applications of computer technology and our ethical responsibilities when deciding how to best use it. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 199 Critical Thinking: Science and the Occult 4.00 Introduces scientific method, assessment criteria for scientific observations and explanations and the difference between genuine and bogus science. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHILOSOPHY

PHL 185 Computer Ethics 3.00 Addresses the ethical and social issues that arise around the use of computer technology. Explores the use and potential applications of computer technology and our ethical responsibilities when deciding how to best use it. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 191 Critical Thinking: Language and the Layout of Argument 4.00 Analyzing arguments, recognizing arguments when they occur, discerning simple logical patterns of argument, extracting arguments from the contexts in which they occur, restating them in clear and concise terms and clearing away needless language in formulating arguments. Common reasoning errors involving fallacies are identified and presented with logical alternatives. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 195 Critical Thinking: Science and the Occult 4.00 Introduces scientific method, assessment criteria for scientific observations and explanations and the difference between genuine and bogus science. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 197 Electronic Media & The Presentation of Reality 4.00 Addresses the ethical and social issues that arise around the use of electronic media. Explores the use and potential applications of computer technology and our ethical responsibilities when deciding how to best use it. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 201 Being and Knowing 4.00 Introduces metaphysics and the theory of knowledge via the works of important figures in the history of philosophy. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 202 Ethics 4.00 Studies attempts by philosophers to account for the difference between right and wrong, for the notion of moral obligation and to answer the question: How should we lead our lives. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 204 Philosophy of Religion 4.00 Examines the existence and attributes of God, faith, reason and mysticism, religion and science, religion and morality, religious language and life after death from the perspective of the philosopher. Prerequisites:
WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 205 Contemporary Moral Problems: Biomedical Ethics 4.00 Designed primarily for nursing and other health care students. Focuses on applying ethical concepts to the situations and dilemmas nurses and other health care workers confront in their professional roles. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 206 Introduction to Environmental Ethics 4.00 Investigates the ethical questions that pertain to human choices regarding the environment. Some of the questions addressed include: Do non-human animals have rights? What is the environment and do we have an obligation to protect it? What is the proper ethical balance between economic and environmental concerns regarding natural resources? Does the present generation have an ethical obligation to preserve a healthy environment for future generations? Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 207 Ethical Issues in Aging 4.00 This course will investigate central ethical issues pertaining to the care of elderly patients. Students will become more familiar with various ethical principles and frameworks and then apply these to various ethical issues and dilemmas that arise in caring for the elderly. Students will learn how to identify ethical issues in caring for the elderly and become more proficient in ethical decision making in order to render well-reasoned ethical decisions regarding care for the elderly. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 208 Political Philosophy 4.00 Introduction to and analysis of political theories and concepts through study of the works of major figures in the history of political philosophy from Plato to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 209 Business Ethics 4.00 Designed primarily for students of business and related fields. Reviews some historical and contemporary ethical theories and ethical issues that arise in several aspects of business, such as, management, use of computers, marketing, accounting, and doing business in an international setting. Includes the social responsibilities of corporations, the rights of workers, truth in advertising, the environmental impact of doing business, affirmative action in hiring, sexual harassment in the workplace, respect for cultural differences, and the responsibilities of the individual in the corporate setting. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 210 Introduction to Asian Philosophy 4.00 Introduces the non-dualistic philosophies of India, China, Japan, and South East Asia, which offer a complementary approach to Western traditions in logic, ethics, epistemology, and metaphysics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 211 Existentialism 4.00 This course will investigate existential philosophy from the 19th Century to the present. Students will become familiar with the different branches of existentialist thought and the influence existentialism had on philosophy, literature, and culture in the 19th and 20th Centuries. Philosophers that will be studied include, but are not limited to, some of the following: Kierkegaard, Nietzsche, Heidegger, Camus and Sartre. Prerequisite: Placement into WR 121 and placement into RD 90 Audit available.

PHL 221 Symbolic Logic 4.00 Utilizes the structures and techniques of symbolic logic to illustrate the basis for assessing validity in arguments. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement scores. Audit available.

PHL 222 The Philosophy of Art and Beauty 4.00 Introductory course exploring individual and cultural assumptions about the nature of art and aesthetic expression. Applies a philosophical approach to the study of art forms from many world cultures. In seminar/workshop format, the class involves the study of a variety of media and genres, with possible field trips to museums, galleries gardens, and performing arts events. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 298 Independent Study: Philosophy 4.00 Advanced, individualized study in areas of philosophy not considered in other courses to meet special interests or program requirements. Complete a term project and readings approved by the instructor. Recommended: prior study in philosophy and instructor permission. Audit available.

PHYSICS

PHY 101 Fundamentals of Physics I 4.00 Introduction to Physics. Includes mechanics, vectors, energy, simple machines, satellite motion, and the theory of special relativity. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHY 102 Fundamentals of Physics II 4.00 A conceptual study of physics. Topics include properties of matter, heat and thermodynamics, and atomic and nuclear physics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHY 103 Fundamentals of Physics III 4.00 A conceptual study of physics. Topics include waves and sound, electricity and magnetism, and light and optics. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

PHY 121 Elementary Astronomy 4.00 Introduces the contents of our solar system, including the earth, its moon, the other planets and moons; asteroids, comets, and meteors. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHY 122 Elementary Astronomy 4.00 Introduces stellar astronomy, including our sun, properties of stars, and stellar evolution. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHY 123 Elementary Astronomy 4.00 Introduction to star clusters, the contents of our galaxy; other galaxies, including active galaxies, and cosmology. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHY 196 Observational Astronomy 1.00 Designed to teach use of telescopes and binoculars in conjunction with star atlases and catalogs in locating and identifying astronomical objects in night skies. An introduction to clock drives, astrophotography, and photoelectric photometry will be provided. Prerequisite: PHY 123. Audit available.

PHY 201 General Physics 4.00 Introductory physics (algebra based) for science majors, pre-medical, pre-dental, pre-chiropractic and pre-physical therapy students. Topics include mechanics including statics, forces and motion energy; collisions, circular motion and rotational dynamics. Prerequisite or concurrent: MTH 111 and its prerequisite requirements. Audit available.

PHY 202 General Physics 4.00 Topics include mechanical properties of matter, heat, waves, sound and light. Algebra-based physics. Prerequisite: PHY 201 and its required prerequisites. Audit available.

PHY 203 General Physics 4.00 Topics include electricity, magnetism and radioactivity. Algebra-based physics. Prerequisite: PHY 201 and its prerequisite requirements. Audit available.

PHY 211 General Physics (Calculus) 5.00 Topics include concepts in mechanics and their relationship to practical applications for science and engineering majors. Prerequisites: MTH 251 and MTH 252 and their prerequisite requirements. Prerequisite/Concurrent: MTH 252. Audit available.

PHY 212 General Physics (Calculus) 5.00 Topics include concepts in fluid mechanics, waves, thermodynamics and optics. Prerequisites: PHY 211 and its prerequisite requirements. Audit available.

PHY 213 General Physics (Calculus) 5.00 Topics include concepts in electromagnetism together with their relationship to practical applications. Prerequisites: PHY 211 and its prerequisite requirements. Audit available.
PARALEGAL

PL 101 Introduction to Law - Fundamentals 3.00 Covers sources and function of law in the United States, court systems and procedure, introductory legal analysis, and an overview of civil and administrative law. Prerequisite: WR 121. Audit available.

PL 102 Introduction to Law - Substantive Areas 3.00 Continues the study of several substantive areas of law. Prerequisite: PL 101. Audit available.

PL 103 Introduction to Law - Ethics 3.00 Covers Oregon ethics rules and their practical application for the paralegal. Includes application of rules via systems and procedures used in law practice. Prerequisite: PL 101. Audit available.

PL 104 Investigation Techniques for Paralegals 3.00 Explores fundamental techniques of legal investigation from the incident scene to the courtroom. Includes ethics, research techniques, investigative strategies, recordkeeping, information sources, witness location, report writing, subpoenas, physical and demonstrative evidence. Prerequisites: PL 101. Audit available.

PL 105 Litigation 3.00 Covers litigation process with emphasis on civil litigation. Includes a study of tort law principles focusing on the trial process (investigation, discovery and motion practice) emphasizing preparation of documents and pleadings. Prerequisite: PL 101. Audit available.

PL 106 Legal Research and Library Use 3.00 Covers function of the law library and develops research skills through the use of digests, encyclopedias, reporter systems and practice manuals. Prerequisites: PL 101. Audit available.

PL 107 Techniques of Interview 3.00 Students study and conduct simulated interviews. Prerequisite: WR 121. Prerequisite/concurrent: PL 101. Audit available.

PL 109 Estate Planning 3.00 Approaches to estate planning, including wills, trusts, shared ownership, gifts and life insurance are covered. Includes objectives people have for estate planning, probate and the estate, and structures and results of different estate plans. Audit available.

PL 111 Probate Practice 3.00 Covers preparation and filing of necessary papers used to administer an estate under Oregon state law. Audit available.

PL 113 Income Tax Law 3.00 Focuses on three key aspects of income taxation (principally federal income taxation). Includes basic concepts of income taxation, and understand the interaction of various components involved in the determination of the income tax. Covers the audit process, including how a taxpayer may appeal an audit decision and how an appeal may reach various courts. Learn how research differs from other legal research and will understand the implications of various types of authorities regarding tax law and procedure. Prerequisite: PL 101. Audit available.

PL 116 Real Property Law I 3.00 Covers introductory principles and procedures in real and personal property law including possessory interests, estates, deeds, contracts, servitudes, leases, title issues and real estate transactions. Audit available.

PL 124 Law Office Management 3.00 Covers law office organization and management, personnel management, accounting, procedural and automated systems, and other aspects of law office management. Audit available.

PL 128 Legal Correspondence and Forms 3.00 Covers basic forms of legal writing generally required of a paralegal in a general law practice. Uses writing techniques and tools common to internal law office communications as well as communicating techniques between lawyer and client. Prerequisites: WR 121, 122; PL 101. Prerequisite/concurrent: PL 203. Audit available.

PL 130 Legal Software 3.00 Provides training in a variety of specialized legal software applications through lecture, discussing and other classroom activities in current legal software applications, which include legal software used for conflict-checking, timekeeping, litigation support and trial preparation. Prerequisite: PL 101 and CAS 133. Audit available.

PL 140 Immigration Law for Paralegals 3.00 Provides students with an overview of United States immigration laws. Includes review and study of many critical immigration law doctrines, including nationality and citizenship, inadmissibility and deportability grounds, the worldwide immigrant selection system, basic administrative law concepts, asylum and refugee law, and defenses to deportation. Students will have an opportunity to analyze fact situations, review caselaw, draft documents and apply remedies, principles and doctrines discussed in the class. Recommended: PL 101. Audit available.

PL 201 Legal Research and Library Use 3.00 Covers function of the law library and develops research skills through the use of digests, encyclopedias, reporter systems and practice manuals. Prerequisites: PL 101. Audit available.

PL 202 Computer Research in Law 3.00 Covers how and when to use computers for legal research and operational content differences between Westlaw and Lexis. Includes retrieving specific documents, checking citations, and practice research. Prerequisite: PL 201. Audit available.

PL 204 Applied Legal Research and Drafting 3.00 Students practice legal research skills and draft legal memoranda common to the practice of law. Prerequisite: PL 203. Audit available.

PL 206 Intellectual Property Law 3.00 Introduces the basic terms, concepts, laws, and administrative rules necessary to interpret and accomplish tasks typically assigned to paralegals by attorneys in intellectual property (IP) law practices. Emphasizes patent and trademark prosecution (filing documents with the United States Patent and Trademark Office), copyrights, and to lesser extent, unique facets of IP litigation. Audit available.

PL 208 Family Law 3.00 Covers theory, procedure, and practical aspects of a domestic relations practice. Includes dissolution of marriage, issues of custody, visitation, property and debts, adoption, paternity, domestic violence, and prenuptial and cohabitation agreements. Audit available.

PL 210 Elder Law 3.00 Explores and provides strategies for preserving clients’ quality of life as they age in the field of elder law, including important planning issues, such as where to live; financial management; health care; protection; insuring against risk of high costs of care; and planning for serious illness and death. Covers various tools, including elder abuse protection, long term care, Medicare and Medicaid, insurance, trusts, social security, guardianships and conservatorships and other planning issues. Prerequisite: PL 101 and PL 109. Audit available.

PL 214 Fiduciary Tax and Accounting 3.00 Covers basic federal and Oregon income taxation of estates and trusts and skills necessary to prepare required documents. The basic form of fiduciary accounting for filing of accounts with the court is also covered. Prerequisite: PL 113. Audit available.

PL 215 Employee Benefits Programs 3.00 Introduces various types of employee benefits programs emphasizing tax qualified retirement plans. Non-qualified plans and other types of employee benefits are covered as time allows. Audit available.

PL 216 Employment Law 3.00 Overview of Employment Law and remedies under state and federal law, including employment at will doctrine; wrongful discharge claims; discrimination based upon disability, age, gender and other claims; retaliation claims; Equal Pay Act, Family Medical Leave Act; health and safety issues; BOLI process; and other relevant issues. Audit available.

PL 217 Real Property Law II 3.00 Covers key real estate transactions documents and concepts, including earnest money agreements, deeds, title insurance escrow instructions, financing documents and closing documents. Audit available.

PL 219 Contract and Consumer Law 3.00 Provides an overview of contract law and selected consumer law claims and defenses. Includes understanding the basics of contract information, contract provisions, contract claims and defenses. Covers selected consumer law issues, including lemon law, warranties and fair debt collection. Prerequisite: PL 101. Audit available.

PL 220 Worker’s Compensation 3.00 Covers principals and procedures that exist in the Oregon’s worker’s compensation system. Familiarization with a general understanding of the rules and concepts that control the right to compensation in the system as well
COURSE DESCRIPTIONS

PL 221 Bankruptcy Law 3.00 Covers Bankruptcy Code, Rules of Procedure, types of bankruptcy relief, exempt and non-exempt property, dischargeability of debts, and bankruptcy forms. Audit available.

PL 222 Corporate Law Practice 3.00 Covers most significant state corporation law, how to assist in preparation and filing of documents necessary to form a corporation, how to draft resolutions for corporate shareholders and directors’ meetings, and how to pay dividends to shareholders or to terminate business and distribute property. Audit available.

PL 224 Torts and Personal Injury 3.00 Provides an overview of tort law and handling personal injury claims, including paralegal’s role. Includes study of international torts, negligence and strict liability claims; defenses; vicarious liability; tort claims act; damages; analyze fact situations; review case law; draft pleadings; evaluate damages; discovery issues; and apply principles discussed in class. Prerequisite: PL 101 and PL 102. Audit available.

PL 225 Advanced Law Office Management 3.00 Examines practical solutions to law office management problems through application of theory and concepts discussed using a case study approach. Audit available.

PL 226 Criminal Law for Paralegal 3.00 Covers general criminal law and procedure to gain a basic understanding of the criminal justice system as well as the Paralegal’s role in the criminal justice system. Audit available.

PL 280A Cooperative Education: Paralegal Students work at approved job sites to receive as varied and complete a job experience as possible under job conditions. Designed to meet the needs of the individual student and the conditions of the work site. Goals for each student are established by written Learning Objectives between the student and work site, approved by the Instructor or program. Department approval and completion of 18 credits in Paralegal Program (unless waived by the Department) are required. Audit available.

PL 280C Cooperative Education: Peace and Conflict Studies through work and/or volunteer time spent in settings that provide learning experiences. Department permission required. Audit available.

PL 280B Cooperative Education: Community Service & Action Seminar 2.00 This interdisciplinary seminar provides an integrative framework for students engaged in community service and cooperative education work. Focuses on social interaction, group and organizational processes, and public policies related to service, advocacy, and social change placements.

PL 280 Cooperative Education: Political Science Extends knowledge of Political Science through work and/or volunteer time spent in settings that provide learning experiences. Department permission required. Audit available.

PS 111 Skills and Issues 1.00 Designed to deepen understanding of PS 201 or PS 202. Includes interactive tutorials, student skills building exercises, and community-based projects. Co-requisite: PS 201 or PS 202. Audit available.

PS 201 U.S. Government: Foundations & Principles 4.00 Examines the development of constitutional traditions in the United States. Includes topics such as free speech, equal rights under law, movements, interest groups, political parties, and elections in a democratic struggle for power. PS 201, 202, and 203 need not be taken in sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 202 U.S. Government: Institutions & Policies 4.00 Examines the national institutions of United States politics including the Legislative, Executive, Judicial, and Bureaucratic. Include national policies, foreign policy, taxation, spending priorities, government regulations and entitlements. PS 201, 202, and 203 need not be taken in sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 203 State and Local Government 4.00 Examines state and local government policy formulation and outcomes on issues ranging from taxation to prisons, and education to environmental concerns. Focuses on Oregon state and local politics. PS 201, 202, and 203 need not be taken in sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 204 Comparative Political Systems 4.00 Covers the study of political systems in various countries. Includes such issues as policy-making, representation/participation, political culture, political economy and development and governance. Countries chosen will represent various political systems including, democracies, totalitarian regimes, dictatorships, post-communist systems in transition, newly industrializing and developing countries. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 205 Global Politics: Conflict & Cooperation 4.00 Examines the nature of relations among states. Topics include motivating factors such as nationalism and imperialism, economic rivalries and the quest for security, questions of national sovereignty and international cooperation, war and peace, global issues, and the future. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 211 Peace and Conflict 4.00 Explores the causes and manifestations of violence in actions involving oneself, society, one’s nation, and the global community. Alternatives to oppressive behavior, undemocratic institutions, and the violent resolution of conflict are considered. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 101 Psychology and Human Relations 4.00 Applies psychological principles to relationships in both personal and professional environments. Includes an overview of basic personality and social psychology concepts, as well as specific skill development in the areas of communication, listening, and conflict resolution. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 201A Introduction to Psychology - Part 1 4.00 Surveys the major concepts, theoretical perspectives, empirical findings, and historical trends in scientific research, biological psychology, sensation and perception, learning theory, memory, language, cognition, consciousness, and human development. Provides an overview of popular trends, examines the overarching themes of heredity vs. environment, stability vs. change, and free will vs. determinism, and emphasizes the sociocultural approach which assumes that gender, culture, and ethnicity are essential to understanding behavior, thought, and emotion. Psychology 201A is the first term of a two-term sequence in introductory psychology. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 202A Introduction to Psychology - Part 2 4.00 Explores topics such as human development and learning, social psychology concepts, as well as specific skill development in the areas of communication, listening, and conflict resolution. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.
COURSE DESCRIPTIONS

Part 2 4.00 Surveys the major concepts, theoretical perspectives, empirical findings, and historical trends in personality theory, psychological disorders, therapy, emotion, motivation, intelligence, health psychology, and social psychology. Provides an overview of popular trends, examines the overarching themes of heredity vs. environment, stability vs. change, and free will vs. determinism, and emphasizes the sociocultural approach which assumes that gender, culture, and ethnicity are essential to understanding behavior, thought, and emotion. Psychology 202A is the second term of a two-term sequence in introductory psychology. Recommended: PSY 201 or 201A. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 213 Introduction to Behavioral Neuroscience 4.00 Surveys the role of the brain and nervous system in behavior, psychological functioning, and neurophysiological processes that underlie human development. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and PSY 201A or one year of biology. Audit available.

PSY 214 Introduction to Personality 4.00 Covers a variety of personality theories including the theoretical and scientific explanations for individuals' characteristic patterns of perception, thought, emotion and behavior. Emphasizes the understanding and mastery of personality constructs applied to students' personal and professional lives. Recommended: PSY 201A or 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 215 Human Development 4.00 Surveys major developmental theories and patterns of change and continuity from birth to death in human subjects. Emphasizes biological, cognitive, and emotional development through the lifespan. Examines cultural influences on development. Recommended: PSY 201A or 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 216 Social Psychology 4.00 Surveys the scientific study of how individuals think about, influence, and relate to one another with respect to social beliefs, persuasion, attraction, conformity, obedience, prejudice, aggression, and pro-social behaviors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 217 Introduction to Abnormal Psychology 4.00 Surveys the history, theories, etiology, assessment, diagnosis, and treatment of the spectrum of psychological disorders. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and PSY 201 or 201A or PSY 215. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PSY 218 Mathematics for Psychology 4.00 Provides the mathematical background for students who have completed a course in introductory psychology. Prerequisite: Placement in WR 121 or completion of WR 115. Department permission required. Audit available.

PSY 280A Cooperative Education: Psychology - Worksite Placement Extends knowledge of Psychology through work in settings which provide learning experiences supplementing classroom learning. Department permission required. Prerequisite: Placement in WR 121 or completion of WR 115 with a "C" or better. Audit available.

PSY 285 Psychology Seminar and Practicum 4.00 Explores psychology as an academic discipline, a career, and as a body of research. Focuses on critically understanding research, professional writing, and oral presentation skills. Includes a 60 hour (minimum) practicum in the community. Highly recommended: MTH 243 Prerequisites: PSY 201 or 201A and PSY 202 or 202A. Prerequisite/Concurrent: WR 122. Audit available.

PSY 289 Independent Study: Psychology 3.00 Advanced individualized study of psychology not considered in other courses to meet special interests or program requirements. Complete a term project and readings approved by the instructor. Recommended: Prior study of psychology. Prerequisite: Placement in WR 121 or completion of WR 115 with a "C" or better. Instructor permission required. Audit available.

RELIGION

R 201 Asian Religions 4.00 Explores the religions of Asia, including Hinduism, Buddhism, Daoism, Confucianism, and Shinto. Includes readings of sacred texts and scholarly literature. Focuses on the founders and history, myths and doctrines, rituals and traditions, and social and personal ethics for each tradition. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

R 210 World Religions 4.00 Explores the major religions of the world, including Hinduism, Buddhism, Chinese religions, Christianity, Judaism, and Islam. Attention is given to their founders and history, myths and doctrine, rituals and traditions, and social and personal ethics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

RADIOGRAPHY

RAD 100 Introduction to Radiology 2.00 Introduces the health care team and various aspects of radiological sciences. Includes medical ethics, professional organizations, medicolegal considerations, communication, cultural diversity, basic radiation protection, fundamental technical components, radiological history, health care organizations and medical specialties. Department permission required.

RAD 101 Radiographic Positioning I 3.00 Introduces basic positioning techniques used in radiography of the respiratory system, abdomen, upper and lower extremities. Lab includes peer positioning, film critique, anatomical identification, pathologies and an energized section using phantoms. Department permission required.

RAD 102 Radiographic Positioning II 3.00 Basic positioning techniques used in radiography of the digestive system, urinary system and continuation of the upper and lower extremities. Lab includes peer positioning, film critique, anatomical identification, pathologies and an energized section using phantoms. Department permission required. Prerequisite: RAD 101.

RAD 103 Radiographic Positioning III 3.00 Basic positioning techniques used in radiography of the bony thorax, spinal column and pelvic girdle. Lab includes peer positioning, film critique, anatomical
RAD 105 Methods of Patient Care 3.00
Covers general care of patients in radiology department. Emphasizes radiographer’s role regarding patient care with cardiac arrest, vital signs, accident victims, bedside procedures, aseptic techniques, contagious disease control, blood borne pathogens, venipuncture, administration of medication and contrast media reactions. Introduces fundamentals of urinary catheterization. Lab provides application of theory. Department permission required.

RAD 106 Radiographic Equipment I 4.00
Covers fundamental concepts of energy and measurements, atomic structures, molecules, electricity, magnetism, electromagnetism, transformers, and rectifiers. Department permission required.

RAD 107 Radiographic Equipment II 4.00
Covers generators, timers, x-ray tubes, recording devices, physiology of sight, image intensifiers, television camera/monitors, digital radiography, mobile radiography and fluoroscopic equipment, tomography and teleradiography. Department permission required. Prerequisite: RAD 106.

RAD 107C Principles of Fluoroscopy 1.00
Covers the state of Oregon fluoroscopy education requirements on operation of the equipment. Designed as an update for physicians or radiographers and to satisfy the Oregon Radiation Protection Services rules for fluoroscopy. Department permission required.

RAD 110 Radiographic Clinic I 4.00
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 106.

RAD 115 Principles of Exposure I 3.00
Covers production and control of scattered radiation, stereo radiography, grid technique, filtration, half value layer, magnification, contrast and density principles. Lab includes application of theories using energized equipment and test tools. Department permission required. Prerequisite: RAD 106.

RAD 120 Radiographic Clinic II 4.50
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 110.

RAD 122 Radiation Protection - Biology 3.00
Introduces biological effects of ionizing radiation and application of principles to minimize the risks of man-made radiation. Examines standards and requirements determined by government guidelines. Department permission required. Prerequisite: RAD 105.

RAD 130 Radiographic Clinic III 4.50
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 106.

RAD 132 Radiographic Image Production 3.00
Introduces theory and practical application of film/screen systems, sensiometry, image formation, automatic film processing, subtraction/duplication, computed radiography and quality assurance. Lab includes use of test tools with energized equipment. Department permission required. Prerequisite: RAD 115.

RAD 140 Radiographic Clinic IV 10.00
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 130.

RAD 203 Applied Radiography Topics 2.00
Examines legal principles in radiography by looking at a variety of topics related to medical/professional ethics. Discussions will include the code of ethics and bioethical issues in radiography. Also covered will be the attitudes and communication knowledge needed to develop critical thinking skills in patient care. Prerequisite: RAD 140.

RAD 205 Radiographic Positioning V 3.00
Covers basic positioning of the skull, parasanal sinuses, facial bones, temporal bone, mastoids and mandible. Lab includes peer positioning, film critique, anatomical identification, pathologies and energized imaging with the use of phantoms. Department permission required. Prerequisite: RAD 103.

RAD 206 Survey of Medical Imaging Diseases 3.00
Covers basic principles and processes of disease, characteristics of neoplasms and systems with related disease as it applies to the radiological science imaging. Department permission required.

RAD 209 Advanced Radiological Procedures 2.00
Covers contrast media, fluoroscopy exams and special procedures involving the following systems: CNS, biliary, mammary, female reproductive, respiratory, pancreatic and salivary. Also covers techniques and equipment used to catheterize the vascular system, indications for various vascular procedures, contrast agents used for specific procedures and selective vascular anatomy. Department permission required. Prerequisite: RAD 205.

RAD 210 Radiographic Clinic V 6.50
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 140.

RAD 211 Advanced Imaging Modalities 4.00
Builds on information from previous radiation physics courses in the series. Introduces computed tomography, magnetic resonance, nuclear medicine, sonography and radiation therapy. Department permission required. Prerequisite: RAD 107.

RAD 215 Principles of Exposure II 3.00
Introduces theory and application of inverse square law, distortion, radiographic quality, technique conversion factors, formulation of technique charts, and quality assurance. Lab includes use of energized equipment and test tools. Department permission required. Prerequisite: RAD 132.

RAD 216 Radiography Registry Review 2.00
Provides review of the major content areas appearing in the national certification examination. Requires class participation, review of radiation protection, equipment operation and maintenance, image production and evaluation, radiographic procedures and patient care. Students must demonstrate an understanding of these subjects by successful completion of unit examinations and at least one mock registry examination.

RAD 220 Radiographic Clinic VI 6.50

RAD 230 Radiographic Clinic VII 9.00
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping, and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 220.
RAD 240 Radiographic Clinic VIII 7.00
Provides clinical education experience in affiliated hospital radiology department under supervision of registered radiographer and radiologist. Includes application of equipment manipulation and operation, imaging radiological procedures, radiation protection and patient care. Requires clinical competencies, completion of clinical objectives, clinical assessments, attendance and terminal clinical competencies in radiological imaging. Department permission required. Prerequisite: RAD 230.

RAD 251 Sectional Anatomy - Neck/Thorax 1.00
Introduces the normal appearance of anatomical structures in multiple planes. Enables student to differentiate between normal anatomical structures and abnormalities. Designed for graduate technologists or senior radiography students. ARRT certification or department permission required.

RAD 252 Sectional Anatomy - Abdomen/Pelvis 1.00
Introduces the normal appearance of anatomical structures in multiple planes. Enables student to differentiate between normal anatomical structures and abnormalities. Designed for graduate technologists or senior radiography students. ARRT certification or department permission required.

RAD 253 Sectional Anatomy - Head/Spine 1.00
Introduces the normal appearance of anatomical structures in multiple planes. Enables student to differentiate between normal anatomical structures and abnormalities. Designed for graduate technologists or senior radiography students. ARRT certification or department permission required.

RAD 254 CT Physics, Equipment and Instrumentation 2.00
Introduces Computed Tomography theory and application, patient care, CT safety, imaging procedures, data acquisition and processing and the physical principles of image formation. Prerequisite: Department permission required.

RAD 255 CT Procedures, Protocols and Pathology Correlation 2.00
Emphasizes CT Protocol development, comparison of CT parameters, parameter tradeoffs, normal vs abnormal anatomy visualization and contrast media utilization. Prerequisite: Department permission required.

RAD 270 CT Clinical Education I 5.00
Provides clinical education experience in an affiliated hospital or clinical CT department under the direct supervision of a registered technologist and radiologist. Includes the application of equipment use, manipulation and operation, CT imaging procedures, CT radiation safety and patient care. Requires attendance and clinical competencies, objectives, and performance assessments. Teaches skills that are required to function in the clinical area as a CT technologist, with a professional work ethic. May be repeated one time for credit. Prerequisite: RAD 251, RAD 252, RAD 253, and RAD 254.

RAD 271 CT Clinical Education II 5.00
Provides intermediate and advanced clinical education experience in an affiliated hospital CT imaging department under the supervision of a credentialed CT technologist and radiologist. Includes application of equipment manipulation and operation, CT imaging procedures, radiation safety, medicolegal and ethical protocols, record keeping and patient care. Requires attendance and completion of clinical competencies, objectives, and performance assessments. Teaches the necessary skills that are required to function in the clinical area as a CT technologist, with a professional work ethic. May be repeated one time for credit. Prerequisite: RAD 270.

RAD 285 Imaging for Pathology 1.00
Compares the appearance of pathology using various imaging modalities such as CT, MRI, diagnostic radiography, and others. Covers variables of imaging exam selection according to pathology. All classes are designed for graduate technologists and senior medical imaging students. ARRT certification or department permission required.

RAD 290 Mammography I 4.00
Provides the means for a certified radiographer (A.R.R.T.) to learn the necessary knowledge and skills to become certified as an A.R.R.T. mammographer. This will enable the radiographer to understand the requirements and procedures for the new regulations in mammography.

READING

RD 80 Reading 80 3.00
Instruction in vocabulary, dictionary use, motor skills, comprehension, some study skills. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 80A Reading 80A 3.00
Topics include vocabulary, dictionary use, motor skills, comprehension, reading rate improvement, and study skills. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 81A Reading 81A 1.00
Focuses on instruction in vocabulary, study skills, and dictionary use. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 82A Reading 82A 2.00
Focuses on instruction in vocabulary, comprehension, study skills, and dictionary use. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 90 Reading 90 3.00
Improves reading through work on vocabulary development, motor skills, comprehension and some reading rate improvement. Prerequisite: Placement into RD 90 or successful completion of RD 80 AND placement into WR 80. Audit available.

RD 90A Reading 90A 3.00
Reading improvement through work on vocabulary development, motor skills, comprehension and reading rate. Prerequisite: RD 80 Audit available.

RD 91A Reading 91A 1.00
Focuses on reading effectiveness. Comprehension strategies, vocabulary development, and reading rate are emphasized. Audit available.

RD 92A Reading 92A 2.00
Focuses on reading effectiveness. Comprehension strategies, vocabulary development, and reading rate are emphasized. Prerequisite: Placement into RD 90 or successful completion of RD 80. Audit available.

RD 95 Reading for Enjoyment 3.00
Help students develop their abilities to read, understand, and enjoy literature. Prerequisite: Placement into RD 90 or instructor permission. Audit available.

REAL ESTATE

RE 100 Introduction to Real Estate 3.00
Real estate brokerage, appraisal, escrow, and management. Focuses on these aspects of the real estate industry and provides basic information for choosing real estate as a career. Audit available.

RE 110 Real Estate Practices 3.00
Introduces the real estate business in general, real estate licensing laws, listing agreements, sales agreements, and fair housing. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 112 Real Estate Law 3.00
Introduces the laws affecting real estate ownership and the transfer of real estate ownership. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 114 Real Estate Agency Law 2.00
Topics covered are common law and statutory law aspects of agency. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 116 Real Estate Finance 3.00
Focuses on expanding reading frequency and effectively reading complex college level texts. Emphasizes comprehension strategies, critical reading and thinking skills, information literacy, vocabulary development, student success strategies and adapting reading rate to different reading tasks. Prerequisite: Placement into RD 115 or successful completion of RD 90 AND placement into WR 80 OR successful completion of WR 80; OR ESOL 252 and ESOL 260. Audit available.

RE 117 Advanced College Reading 3.00
Further exploration of topics covered in RD 115, emphasizing inferential, critical, and technical reading. Prerequisite: Successful completion of RD 115. Audit available.

READERS
RE 118 Real Estate Brokerage 2.00  Topics include advertising, financial records, regulatory requirements for real estate offices, escrow, office manuals, and other topics. Satisfies Oregon Real Estate Broker pre-licensing. Audit available.

RE 126 Real Estate Contracts 2.00  Topics include basic contract law, listing agreements, earnest money agreements, options, first rights of refusal, leases and escrow agreements. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 130 Real Estate Advanced Practices 3.00  Satisfies the Oregon Real Estate Agency post-licensing requirement to complete an advanced course related to the practice of real estate prior to their first renewal of their license. Audit available.

RE 140 Real Estate Broker Property Management 1.00  Topics include Oregon real estate license and administrative rules, Oregon Residential Landlord and Tenant Act, record keeping, and anti-discrimination statutes. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 210 Real Estate Appraisal-Foundations 3.00  Basic principles, methods and techniques of determining the value of real estate in connection with transfer of ownership, financing and credit, just compensation in condemnation, and as a basis for taxation with transfer of ownership, financing and credit. No knowledge of real estate required. Audit available.

RE 211 Real Estate Appraisal-Single Family Residences 3.00  Introduces more sophisticated methods and techniques of valuation related to the appraisal of single family residential properties. Satisfies Oregon State Qualifying Education requirements for licensing/certification. Audit available.

RE 212 Real Estate Appraisal - USPAP 2.00  Focuses on requirements for ethical behavior and competent performance by appraisers which are set forth in the Uniform Standards of Professional Appraisal Practice. Satisfies Oregon State Qualifying Education requirements for licensing/certification. Audit available.

RE 226 Real Estate Investments - Advanced 3.00  Introduces more sophisticated and complex real estate finance and investments concepts. Audit available.

RE 241 RE Brokerage Administration and Sales Supervision 4.00  Management theory, characteristics and functions of successful management organizational formats. Includes corporate partnerships and proprietorships, management related problems and license types and requirements. Required prior to taking the Oregon Real Estate Broker's exam. Audit available.

RE 250 Real Estate Investments I 3.00  Introduces various aspects of personal real estate investments. Discusses basic strategies of real estate investments, including the relationship between risk and return. Introduces important considerations for potential investors when purchasing, holding and selling investment property. Audit available.

RE 252 Real Estate Property Management 6.00  Emphasizes functions and responsibilities of managers of real property. Includes applications of contract and agency law, and statutory materials concerning landlord and tenant, anti-discrimination, and fair credit reporting. Satisfies Oregon State property management license pre-licensing requirements. Audit available.

RUSSIAN

RUS 101 First Year Russian 4.00  Emphasizes active communication in beginning Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Audit available.

RUS 102 First Year Russian 4.00  Continues the work of RUS 101. Emphasizes active communication in Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of RUS 101 or instructor permission. Audit available.

RUS 103 First Year Russian 4.00  Continues the work of RUS 102. Emphasizes active communication in Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of RUS 102 or instructor permission. Audit available.

RUS 111C First Year Russian Conversation 1.00  Continues to practice structures and vocabulary presented in RUS 150 in a conversational format. Recommended: Enrollment in RUS 150. Audit available.

RUS 113A First Year Russian Conversation 3.00  Reviews structures and vocabulary presented in first year Russian. Special emphasis on conversational skills. Recommended: Completion of RUS 103, 151, or instructor permission. Audit available.

RUS 150 First Year Russian 6.00  Emphasizes active communication in beginning Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of RUS 150-151 is equivalent to RUS 101-102-103. Audit available.

RUS 151 First Year Russian 6.00  Continues the work of RUS 150. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of RUS 150 or instructor permission. Completion of RUS 150-151 is equivalent to RUS 101-102-103. Audit available.

RUS 201 Second Year Russian 5.00  Continues the work of first year Russian, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year Russian at college level or instructor permission. Audit available.

RUS 202 Second Year Russian 5.00  Continuation of RUS 201. Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of RUS 201 or instructor permission. Audit available.

RUS 203 Second Year Russian 5.00  Continuation of RUS 202. Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of RUS 202 or instructor permission. Audit available.

RUS 211B Intermediate Russian Conversation 2.00  Emphasizes conversational skills and listening comprehension at the second-year level. Recommended: Completion of first year Russian at college level or instructor permission. Audit available.

RUS 213A Intermediate Russian Conversation 3.00  Emphasizes conversational skills and listening comprehension at the second-year level. Recommended: Completion of RUS 202 or instructor permission. Audit available.

RUS 241 Great Russian Writers 4.00  Introduction to Russian literature's great writers including Pushkin, Lermontov, Gogol, Dostoevsky, Tolstoy, Zoshchenko, Olesha and Bulgakov. Explores themes, genres, style, historical context, social, and cultural issues. Course conducted in English and all readings in English. No knowledge of Russian needed. Prerequisite: Placement into WR 121. Audit available.

RUS 260B Russian Culture 2.00  Russian culture through film. Enhances understanding of Russian culture and contemporary society through analysis of cultural and social issues presented in five Russian films. May explore issues including but not limited to, Russian women, female gender roles, Russian families, the communist past, ethnic conflict, views of the west, and Russia's self identity. Course conducted in English and all films with English subtitles. Course can be taken out of sequence. Audit available.

RUS 261B Russian Culture 2.00  Russian culture through film. Enhances understanding of Russian culture and contemporary society through analysis of cultural and social issues presented in five Russian films. May explore issues including but not limited to, Russian men, male gender roles, marriage and divorce, friendship, Russian youth, organized crime, poverty and wealth. Course conducted in English and all films with English subtitles. Course can be taken out of sequence. Audit available.

RUS 270A Readings in Russian 3.00  Read and discuss accessible works of Russian prose and poetry. Emphasizes skills for reading in Russian. Recommended: Completion of or concurrent enrollment in RUS 203 or instructor permission. Audit available.
RUS 270B Readings in Russian 2.00
Read and discuss accessible works of Russian prose and poetry. Emphasizes skills for reading in Russian. Recommended: Completion of or concurrent enrollment in RUS 203 or instructor permission. Audit available.

SOCIOLOGY

SOC 204 Sociology in Everyday Life 4.00
Introduces the sociological perspective and the scientific study of human social behavior. Focuses on the core concepts, theories, and research on human interactions within social groups and how people are shaped by their social locations (status, roles, race, class, sex, age, etc.) within society’s structures, stratification systems, and institutions, and by cultural processes such as socialization and group dynamics. Prerequisite: RD 115 or equivalent placement test scores. Audit available.

SOC 205 Social Change in Societies 4.00
Explores how societies change by utilizing sociological perspectives to compare and contrast the impacts of changes on individuals and our social institutions (such as the family, economy, politics, education, and religion). Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SOC 206 Social Problems 4.00
Applies the sociological perspective to the study of social problems, including their identification, analyses of causes and consequences, and considerations of possible solutions. Explores topics such as inequality, poverty, crime and delinquency, substance abuse, discrimination, domestic violence, the environment, global stratification, and international conflict. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SOC 211 Peace and Conflict 4.00
Explores causes and manifestations of violence in actions involving oneself, society, one’s nation, and the global community. Alternatives to oppressive behavior, undemocratic institutions, and the violent resolution of conflict are considered. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

SOC 213 Diversity in the United States 4.00
Frames social status differences within the context of social structure and culture. Examines how inequalities and privilege play out through social status and are reinforced through both culture and social structure. Includes statuses such as: race, gender, ethnicity, sexual orientation, age, etc. Includes concepts such as: privilege, social stratification, cultural bias, institutional inequality, and social construction. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

SOC 214A Illumination Project: Tools for Creative Social Activism 1 4.00
Applies the sociological perspective to the study of social problems and possible solutions. Explores topics such as institutional privilege, power and oppression, social identity, cultural assumptions and discrimination. Includes social analysis, group facilitation, social change interventions, creative production and basic acting. This is the first course of a three course sequence. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores and instructor permission. Audit available.

SOC 214B Illumination Project: Tools for Creative Social Activism 2 4.00
Applies the sociological perspective to the study of social problems and possible solutions. Explores topics such as racism, immigration, xenophobia, institutional privilege and oppression and social activism through classroom and community presentations utilizing interactive theater. Includes social analysis, group facilitation, social change interventions, creative production and basic acting. This is the second course of a three course sequence. Prerequisites: SOC 214a and instructor permission. Audit available.

SOC 214C Illumination Project: Tools for Creative Social Activism 3 4.00
Applies the sociological perspective to the study of social problems and possible solutions. Explores institutional oppression and social activism through classroom and community presentations utilizing interactive theater. Includes social analysis, group facilitation, educational methods and practice, social change interventions, creative production and basic acting. This is the third course of a three course sequence. Prerequisites: SOC 214b and instructor permission. Audit available.

SOC 215 Social Issues and Movements 4.00
Explores important social issues and movements from around the world. Examines the impact of social changes and actions on individuals and social structures. Focuses on organized social responses and movements to social problems, utilizing a multicultural and critical-thinking approach. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

SOC 218 Sociology of Gender 4.00
Focuses on how socialization is affected by gender. Topics include how gender is reflected in culture through values, norms, language, media, power, violence, various theoretical approaches, significant social institutions, social movements and issues. Recommended: SOC 204 or SOC 205 or instructor permission. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

SOC 219 Religion & Culture: Social Dimensions 3.00
Explores the relationship between culture, social structure, and religion, through a comparative and cross-cultural examination of religious beliefs, practices, and organization. Audit available.

SOC 223 Social Gerontology/Sociology of Aging 4.00
Explores the diversity of individual and population aging and their consequences for individuals, families, communities and societies, through a life course and social change perspective. Recommend: Introductory sociology course or instructor permission. Prerequisites: WR115, RD115, and MTH20 or equivalent placement test scores. Audit available.

SOC 228 Introduction to Environmental Sociology 4.00
Examines the relationship between society and the environment, with a focus on how industrialization and our increasing demand for natural resources has significantly impacted the planet’s ability to meet the needs of humanity and other species. Explores the structural and cultural causes and consequences of such topics as production, consumption, population, development, pollution, and environmental justice and how to respond to these issues through policies and actions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SOC 230 Introduction to Gerontology 4.00
Introduces current practice, programs, and policies in the field of gerontology. Addresses professional standards of practice and service delivery, as well as advocacy and policy directions, from a person-directed perspective, responsive to social inequalities and cultural diversity. Recommend: Introductory sociology course or instructor permission. Prerequisites: WR115, RD115, and MTH20 or equivalent placement test scores. Audit available.

SOC 231 Sociology of Health & Aging 4.00
Introduces age-related health issues in social and cultural context. Includes the social structuring of age, health and illness; demographics and patterns of health and illness of diverse older adults; issues related to medical and healthcare services; health and long-term care policy and programs. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SOC 232 Death and Dying: Culture and Issues 4.00
Introduces the institution of death in the United States. Includes a broad multicultural, interdisciplinary approach, including sociological, psychological, historical, ethical, cultural, and religious approaches to death, dying, and bereavement across the lifespan. Recommend: SOC 204, 205, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SOC 234 Death: Crosscultural Perspectives 4.00
An interdisciplinary study of the cross-cultural variations regarding human responses to death and the differing cosmological implications these suggest. Death, a cultural universal, is addressed in its diversity from both anthropological and sociological perspective. The topic of death as experienced by several major regions and cultures of the world is explored including Asia, India, Bali, Middle East, Melanesia and Native Americans; historical trends in Western Europe and the Americas are assessed regarding the evolution of...
of contemporary perspectives on mortality. ATH 234 and SOC 234 cannot both be taken for credit. Recommend: A prior course in Anthropology or Sociology. Audit available.

SOC 280A Cooperative Education: Sociology Extend knowledge of sociology through work and/or volunteer time spent in settings that provide learning experiences. Instructor permission required.

SOC 280B Cooperative Education: Community Service & Action Seminar 2.00 This interdisciplinary seminar provides an integrative framework for students engaged in community service and cooperative education work. Focuses on social interaction, group and organizational processes, and public policies related to service, advocacy, and social change placements.

SOC 298 Independent Study: Sociology Advanced, individualized study of areas of sociology not considered in other courses to meet special interests or program requirements. Includes a term project and readings approved by the instructor. Instructor permission required. Recommended: prior study of sociology. Audit available.

COMMUNICATION STUDIES

SP 100 Introduction to Speech Communication 4.00 Covers complexities of the communication process. Includes insights into the causes and effects of general communication behaviors, involvement in active exploration of basic communication theories and concepts, and opportunities to develop communication strengths. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 101 Oral Communication Skills 3.00 Improve listening and speaking skills. Includes oral reports, conference procedures and everyday conversation. Audit available.

SP 105 Listening 4.00 Emphasizes understanding and appreciation of listening as an integral part of the communication process. Investigates and applies current research in listening theory. Analyzes and provides practice in the appropriateness and application of the major types of listening in academic, business, media and interpersonal contexts. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 110 Voice and Articulation 3.00 Present prepared and impromptu assignments with emphasis on understanding the vocal mechanism for production of Standard American speech while learning the International Phonetic Alphabet. Includes group or individual work designed to improve articulation, breathing, projection, expressiveness, and pronunciation. Audit available.

SP 111 Public Speaking 4.00 Introduction to speechmaking based primarily on a traditional public speaking approach. Aids students in developing theoretical understanding and practical application of oral communication skills. Also includes techniques in controlling speech anxiety, how to structure and organize information to present to a variety of audiences, and physical and vocal delivery skills. Prerequisite: MTH 20 or equivalent placement test score, and WR 121. Audit available.

SP 111H Public Speaking: Honors 4.00 An honors version of SP 111. Introduction to speechmaking based primarily on a traditional public speaking approach. Aids students in developing theoretical understanding and practical application of oral communication skills. Also includes techniques in controlling speech anxiety, how to structure and organize information to present to a variety of audiences, and physical and vocal delivery skills. Prerequisite: 3.25 GPA, MTH 20 or equivalent placement test score, and WR 121. Audit available.

SP 112 Persuasion 4.00 Explores theories of persuasion. Develops skills of inquiry and advocacy through oral discourse, including critical analysis and rules of evidence. Practice in using, planning, delivering and refuting persuasive arguments in a variety of extemporaneous formats. Through this course, students will learn how to more effectively influence others as well as how others are trying to influence them. Prerequisite: SP 111 and its prerequisite requirements. Audit available.

SP 130 Business and Professional Speech Communication 4.00 Communication as it relates to business and professional settings. Readings and discussions focus on the climates, settings, philosophies, and practices of organizational communication, including effective business presentations. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 140 Introduction to Intercultural Communication 4.00 Explores the nature and impact of different cultures on communication. Includes interactive relationship forms as the basis for global understanding in the classroom, business or travel. Focus on processing messages with accelerating changes in political, economic and immigration patterns through individual cultural perceptions. Understand and communicate with people who are “different.” Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 212 Voice and Diction 4.00 Voice production and articulation of speech sound, with attention to elementary speech physiology and phonetics. Develops more effective speech for teachers, radio and television speakers, public speakers and others who require special competence in speaking. Prerequisite: SP 111 and its prerequisite requirements. Audit available.

SP 214 Interpersonal Communication: Process & Theory 4.00 Introduces interpersonal communication in different contexts; focuses on message exchange in person-to-person interactions, emphasizing theoretical principles and their application. Emphasizes the development of various communication skills in interpersonal contexts. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 215 Small Group Communication: Process and Theory 4.00 Problem solving aspects of small group activities. Includes process and task, leadership, verbal and non-verbal messages in the small group, norms and roles, conflict reduction, and decision making. Focuses on theory and practice. SP 100 recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 227 Nonverbal Communication 4.00 Introduces the nonverbal aspect of communication as related to verbal communication. Emphasizes the theories and types of nonverbal behavior including influential factors such as: voice, body movement, eye behavior, touch, space, time, smell, and physical and social environments. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 228 Mass Communication 4.00 Explores the symbiotic relationship of the mass media and society from a rhetorical perspective. Investigation into the technological advancements in mass communications and their subsequent affect on public discourse and the individual in society will be examined. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 229 Oral Interpretation 3.00 Oral interpretation of literature from the areas of prose, poetry and drama. Analyze specific literary works and communicate that understanding through performance. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 237 Gender and Communication 4.00 Examines the similarities and differences in male and female communication styles and patterns. Particular attention given to the implications of gender as social construct upon perception, values, stereotypes, language use, nonverbal communication, and power and conflict in human relationships. Discusses influence of mass communication upon shaping and constructing male and female sex roles. Course fulfills block transfer and cultural diversity requirements and is transferable to state four-year colleges and universities. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SP 270 Forensics: Speech and Debate 3.00 Development of public communication skills by representing the college in intercollegiate competition. Designed to improve skills in reasoning and public communication. Audit available.

SP 270B Projects in Public Speaking 2.00 Intercollegiate forensics and non-competitive speaking. Represent the college through participating in the forensics team. Requires one hr/wk meetings with instructor and four hr/wk outside sessions and speech tournaments. SP 111 recommended. Audit available.
COURSE DESCRIPTIONS

SPANISH

SPA 101 First Year Spanish - First Term 4.00 Emphasizes active communication in beginning Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. For beginners. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 102 First Year Spanish - Second Term 4.00 Continues the work of SPA 101. Emphasizes active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Prerequisites: Completion of SPA 101 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 103 First Year Spanish - Third Term 4.00 Continues the work of SPA 102. Emphasizes active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture.Recommended: Completion of SPA 102 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 111A First Year Spanish Conversation 3.00 Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: First year Spanish at the college level or instructor permission. Audit available.

SPA 111B First Year Spanish Conversation 2.00 Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: First year Spanish at the college level or instructor permission. Audit available.

SPA 112 First Year Spanish Conversation 1.00 Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: First year Spanish at the college level or instructor permission. Audit available.

SPA 113A First Year Spanish Conversation 3.00 Continuation of SPA 112A. Recommended: First year Spanish at the college level or instructor permission. Audit available.

SPA 113B First Year Spanish Conversation 2.00 Continuation of SPA 112B. Recommended: First year Spanish at the college level or instructor permission. Audit available.

SPA 113C First Year Spanish Conversation 1.00 Continuation of SPA 112C. Recommended: Simultaneous enrollment in SPA 103 or instructor permission. Audit available.

SPA 150 First Year Spanish 6.00 Emphasizes active communication in beginning Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of SPA 150-151 is equivalent to SPA 101-102-103. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 151 First Year Spanish 6.00 Continues the work of SPA 150. Emphasizes active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of SPA 150 or instructor permission. Completion of SPA 150-151 is equivalent to SPA 101-102-103. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 201 Second Year Spanish - First Term 4.00 Continues the work of first year Spanish, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year Spanish at college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 202 Second Year Spanish - Second Term 4.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of SPA 201 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 250 Second Year Spanish 6.00 Continues the work of first year Spanish, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year Spanish at college level or instructor permission. Completion of SPA 250-251 is equivalent to SPA 101-202-203. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 251 Second Year Spanish 6.00 Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of SPA 250 or instructor permission. Completion of SPA 250-251 is equivalent to SPA 201-202-203. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 211B Intermediate Spanish Conversation 2.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in SPA 201 or instructor permission. Audit available.

SPA 211C Intermediate Spanish Conversation 1.00 Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in SPA 201 or instructor permission. Audit available.

SPA 212C Intermediate Spanish Conversation 1.00 Continuation of SPA 211C. Recommended: Simultaneous enrollment in SPA 202. Completion of SPA 201 or equivalent also recommended. Audit available.
COURSE DESCRIPTIONS

Conducted in Spanish. Specific regional and topical focus is subtitled in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 261B Spanish Culture 2.00 Hispanic culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subtitled in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 261C Spanish Culture 1.00 Hispanic culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subtitled in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 262A Spanish Culture 3.00 Spanish culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subtitled in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 262A Spanish Culture 3.00 Literature written by women in Spanish. Read literary essays, poetry, short stories, novels and/or theater by Spanish and Latin American women. Conducted in Spanish. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 270A Readings in Spanish Literature (Hispanic) 3.00 Reading and discussion of Hispanic people and culture through essays, poetry, short story, novels and theater. Focuses on the Hispanic region, period and genre subtitled in the schedule. Conducted in Spanish. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 271A Readings in Spanish Literature (Women Writers) 3.00 Literature written by women in Spanish. Read literary essays, poetry, short stories, novels and/or theater by Spanish and Latin American women. Conducted in Spanish. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 272A Readings in Spanish Literature (Spain) 3.00 Reading and discussion of Spanish people and culture through essays, poetry, short story, novels and/or theater. Focuses on peninsular literature, period and genre subtitled in the schedule. Conducted in Spanish. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 290A Spanish Composition 3.00 Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 290B Spanish Composition 2.00 Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 291A Spanish Composition 3.00 Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 292A Spanish Composition 3.00 Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

TA 101 Theatre Appreciation 4.00 Explores live theatre productions in Portland metro area, enriching the understanding and appreciation of the theatrical event. Includes reading, researching and evaluating a play to collaboratively create a unified design. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

TA 111 Fundamentals of Technical Theatre 4.00 Covers basic principles and techniques of technical theatre such as stage design, lighting, properties and stage management. Explores the role of the technician in the theatre organization. Lecture and lab allows flexible scheduling. Audit available.

TA 112 Introduction to Set Design 4.00 Covers elements of technical theatre including practical hands-on experience in designing a stage set, construction, the set design and stage rigging. Lecture/lab format provides time for individualized projects. Audit available.

TA 113 Introduction to Stage Lighting 4.00 Explores theater and studio lighting. Focuses on elements of electricity, optics, stage lighting design, color in light, stage lighting instruments and intensity controls. Participate in stage lab activities. Audit available.

TA 116 Stagecraft 3.00 Introduces the basic operation of the stage, scene shop and their related equipment in relation to actual production. Covers the use of power tools as well as, construction materials and techniques used in the modern theater. Gives the student knowledge of the fundamental aspects of technical theater leading to an understanding of an appreciation for the art of stagecraft. Students are required to do three hours of lab a week and participation in departmental productions presented that term. Prerequisite: MTH 20. Audit available.

TA 141 Fundamentals of Acting Techniques 4.00 Introduces basic theatrical techniques. Develops text analysis and performance skills. Develops the beginning level awareness of the physical and vocal skills required of a stage performer. Includes reading and analyzing plays to develop acting skills. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 142 Fundamentals of Acting Techniques 4.00 Acquire concentration and relaxation in approaching a role. Improve performance skills with focus on vocal and physical control. Scene study is used. Prerequisite: TA 141 and its prerequisite requirements. Audit available.

TA 143 Fundamentals of Acting Techniques 4.00 Practice skills from TA 141 and TA 142. Stresses further inquiry and use of knowledge and skills in performance. Includes audition techniques. Prerequisite: TA 141 and its prerequisite requirements. Audit available.

TA 144 Improvisational Theatre 3.00 Become more in touch with the body and senses as used to express yourself and communicate with others. Includes exercise, theatre games and impromptu scenes to tap the creative potential of the human imagination. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 145 Acting for the Camera 4.00 Identifies, exercises and utilizes the actor’s resources to develop acting techniques specifically meant for acting on a visually recorded medium (camera). Taught only in conjunction with Video Production 2. Prerequisite: TA 141. Audit available.

TA 147 Voice and Diction for the Theatre 3.00 Introduces vocal production through a series of exercises which will increase muscle awareness, flexibility and freedom. Includes the mechanics of blank verse, auditioning and material selection as well as voice projection, articulation and performance. Audit available.

TA 148 Movement for the Stage 3.00 Develops awareness and skills in movement as related to acting and communication. Focuses on body awareness, relaxation, energy, creating physical images and character, and communicating through body language. Explores expression through movement. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 180A Theater Rehearsal and Performance 1.00 Credit for performance in theater production, if cast. Gain first-hand experience in performance techniques. Audition required. Audit available.

TA 180B Theater Rehearsal and Performance 2.00 Performance in theater production. Audition required. Audit available.

TA 180C Theater Rehearsal and Performance 3.00 Performance in theater production. Audition required. Audit available.

TA 180D Theater Rehearsal and Performance 4.00 Performance in theater production. Audition required. Audit available.

TA 190A Projects in Theatre 1.00 Design an independent project associated with the theatre. Develop a contract with a theatre arts instructor covering the course content. May be repeated. Audit available.
TA 190B Projects in Theatre 2.00  Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

TA 190C Projects in Theatre 3.00  Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

TA 227 Stage Make-up 3.00  Techniques of applying stage make-up including use of tools and products. Focuses on analyzing the character and theater to create the best make-up for various roles on any given stage. Class time is divided into lecture and student make-up projects. Audit available.

TA 241 Intermediate Acting Technique 4.00  Concentrate on in-depth study of the skills introduced in first year acting. One-act plays will be assigned as projects. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 242 Intermediate Acting Technique 4.00  Comedy characterization as a style of performance. Study and perform a variety of comic literature. Focuses on comedy techniques. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 243 Intermediate Acting Technique 4.00  Emphasizes vocal and physical techniques as well as stylized and contemporary acting methodology. Projects are approved by the instructor to strengthen all areas of stage performance. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 244 Advanced Improvisation 3.00  This class emphasizes the development of improvisational acting skills for sustained narrative and long-form of improvisational theater. Students are encouraged to trust their intuition and to focus their senses, their body awareness and vocal qualities on the creation of narrative structures. Team work and the development of group cohesion are stressed. Prerequisites: TA 144, WR 115 or placement into WR 121 Audit available.

TA 250A Technical Theatre Production 1.00  Provides the opportunity to learn and apply elementary technical theatre skills. Participation in the main stage production required. Course may be taken 3 times for credit. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Prerequisites/concurrent: TA 111, 112, or 113.

TA 250B Technical Theatre Production 2.00  Provides the opportunity to learn and apply basic technical theatre skills. Employee teamwork skills to collaborate throughout the production process. Participation in the main stage production required. Course may be taken 3 times for credit. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores, and TA 250A or Instructor Approval.

TA 250C Technical Theatre Production 3.00  Provides the opportunity to learn and apply intermediate technical skills in one or more areas of technical theatre. Employ teamwork skills to collaborate throughout the production process. Participation in the main stage production required. Course may be taken 3 times for credit. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores, and TA 250 B or Instructor approval.

TA 253A Theatre Rehearsal and Performance 1.00  Performance in a play. May be repeated. Audition required. Audit available.

TA 253B Theatre Rehearsal and Performance 2.00  Performance in a play. May be repeated. Prerequisite: Audition. Audit available.

TA 253C Theatre Rehearsal and Performance 3.00  Performance in a play. May be repeated. Prerequisite: Audition. Audit available.

TA 261 Introduction to Costuming 3.00  Surveys costume history, design, and basic patterning-to-construction techniques. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 274 Theatre History 4.00  Explores the nature of the theatrical event, its emergence and significance in the lives of the people of the past from ancient Greece to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 290A Projects in Theatre 1.00  Advanced independent study course. Contract with a theatre arts instructor for individual project. Examples of projects could be assistant directing, lighting design, costuming, dramaturge. May be repeated. Audit available.

TA 290B Projects in Theatre 2.00  Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

TA 290C Projects in Theatre 3.00  Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

VT 100 Veterinary Medical Terminology 2.00  Covers medical word parts, abbreviations and basic terms along with a basic knowledge of word construction are taught. Program admission or instructor permission required.

VT 101 Introduction to Veterinary Technology 2.00  Covers the job of the veterinary technician. This will illustrate that the course work is both practical and necessary. Program admission required.
hematology and urinalysis. Includes how to perform a complete blood count and to do a urinalysis using current technology. Prerequisites: VT 105; (BI 101 or BI 101B), BI 102; CH 100.

**VT 112 Clinical Laboratory Procedures 5.00** Teaches the knowledge and skills necessary to perform the various types of tests that are usually done in the clinical laboratory of a veterinary hospital. Includes learning to perform serum chemistries on various types of machines, knowledge of special commercial test procedures, and examination of cytology specimens. Prerequisites: VT 105, 106, 111; (BI 101 or BI 101B), BI 102; CH 100.

**VT 113 Veterinary Microbiology 3.00** Develops the knowledge and skills necessary to perform microbiology functions. Includes learning about the various pathological genus and species of bacteria, fungi, and viruses. Focuses on the various laboratory methods used in the identification of bacterial and fungal organisms. Prerequisites: VT 105, 106, 111; (BI 101 or BI 101B), BI 102; CH 100.

**VT 121 Basic Animal Science 4.00** Introduces the livestock industry and the various species of large animal livestock. Includes livestock terminology, breeds, production systems, basic management practices, and animal products and by-products. Lab introduces the livestock production systems and producers.

**VT 150 Veterinary Technician National Examination Prep Course 4.00** Designed for veterinary assistants currently working in the field to prepare for the Veterinary Technician National Examination (VTNE). Emphasizes subject areas covered on the exam. Material presented provides foundation knowledge in animal health care principles and practice for those wishing to further their education.

**VT 201 Anesthesiology 3.00** Introduces basic anesthetic agents, the use and operation of allied machines, monitoring and care of the anesthetized animal patient, and the pre-operative considerations and duties for both surgery and anesthesia. Second year standing required. Prerequisites: VT 105, 106, 111, 112, 113.

**VT 203 Veterinary Procedures Seminar 3.00** Covers the special skill areas of technician training, such as electrocardiography, bandaging, and various diagnostic and therapeutic procedures. Students investigate, research and report (both orally and in writing) on topics of special interest. Prerequisite: VT 202.

**VT 204 Applied Radiography 3.00** Teaches the practical application of radiography in the veterinary profession. Includes principles of x-ray production, the operation and uses of x-ray machines, the care and development of films, and radiographic positioning of animals. Prerequisites: VT 105, 106, 109.

**VT 205 Veterinary Pharmacology 4.00** Introduces general pharmacological principles, drugs, and classification of agents used in veterinary medicine. Prerequisites: VT 105, 106, 107, 108, 111, 112, 113.

**VT 207 Public Health and Sanitation 2.00** Covers the principles of public health and sanitation as they apply to veterinary medicine and the veterinary technician. Emphasizes epidemiology, public health principles and regulations, zoonoses, and meat and food hygiene. Prerequisites: VT 111, 112, 113.

**VT 208 Small Animal Diseases 4.00** Covers important diseases and disease processes occurring in small animals are covered. Includes the causes, pathogenesis, clinical signs, treatment and prevention of each disease. Prerequisites: VT 105, 106, 111, 205, 112, 113.

**VT 209 Large Animal Diseases and Procedures 3.00** Covers the important disease and disease processes, and obstetrics as they occur in large animals. Includes the causes, pathogenesis, clinical signs, treatment and prevention of each disease. Lab includes large animal treatment procedures. Prerequisites: VT 105, 106, 111, 205, 112, 113.

**VT 210 Animal Nutrition 3.00** Introduces various types of nutrients, the basic principles of nutrition as applied to small and large animals, various feeding practices and their economic importance, and important nutritionally caused diseases. Covers care and handling of orphaned animals and special prescription diets. Prerequisites: VT 105, 106, 121; (BI 101 or BI 101B), BI 102; CH 100.

**VT 211 Pharmaceutical Mathematics II 1.00** Continues mathematics as applied to pharmacology from Pharmaceutical Mathematics I. Includes a review of drug dosage calculations and solutions and percents, except problems are more difficult. New topics covered are fluid therapy and cancer chemotherapy problems. Program admission or prerequisite Pharmaceutical Mathematics I required.

**VT 280A Cooperative Education: Clinic I 4.00** Develops career objectives by linking their course work with off-campus learning experiences in business, industry, and/or the public sector. Focuses on office/receptionist skills, animal nursing and restraint, and laboratory procedures. Department permission required.

**VT 280B Cooperative Education: Clinic II 4.00** Develops career objectives by linking their course work with off-campus learning experiences in business, industry, and/or the public sector. Focuses on office/receptionist skills, animal nursing and restraint, and laboratory procedures. Department permission required.

**VT 280C Cooperative Education: Clinic III 4.00** Develops career objectives by linking their course work with off-campus learning experiences in business, industry, and/or the public sector. Focuses on office/receptionist skills, animal nursing and restraint laboratory procedures, pharmacology, radiography, surgical preparation and assistance and anesthesia. Students may request to attend a special clinic, such as the Oregon Regional Primate Center, Oregon Health Science University, The College of Veterinary Medicine at Oregon State University, or a large animal or equine practice. Department permission required.

**VT 280D Cooperative Education: Clinic IV 4.00** Develops career objectives by linking their course work with off-campus learning experiences in business, industry, and/or the public sector. Focuses on office/receptionist skills, animal nursing and restraint laboratory procedures, pharmacology, radiography, surgical preparation and assistance and anesthesia. Students may request to attend a special clinic, such as the Oregon Regional Primate Center, Oregon Health Science University, The College of Veterinary Medicine at Oregon State University, or a large animal or equine practice. Department permission required.
WLD 116B Basic Welding Practice 3.00
Introduces intermediate shielded metal arc welding practice on mild steel plate in accordance with AWS D1.1 Structural Steel welding codes and to industry standards. Introduces welding in the 3F and 4F positions. Second class in a four course sequence. Audit available.

WLD 126A Beginning Gas Tungsten Arc Welding (Heliarc) 3.00
Introduces gas tungsten arc welding and industry standards. Welds common joint configurations in the 1F and 2F positions. Develops foundational skills required for advancement in future coursework. First class in a four course sequence. Audit available.

WLD 126B Basic Gas Tungsten Arc Welding (Heliarc) 3.00
Introduces gas tungsten arc welding and industry standards. Welds common joint configurations in the 3F and 4F positions. Develops foundational skills required for advancement in future coursework. Second class in a four course sequence. Audit available.

WLD 131 Gas Metal Arc Welding 3.00
Develops knowledge and manipulative skills welding with solid wire on ferrous and non-ferrous materials using short arc in the flat, horizontal, vertical and overhead positions. Department permission required. Audit available.

WLD 132 Gas Metal Arc Welding-Pulse 3.00
Develops knowledge and manipulative skills using the Gas Metal Arc Welding - Pulse transfer process on common mild steel and aluminum joints in all positions. Covers safety, users, nomenclature, equipment operation and set up and shut down procedures. Audit available.

WLD 136A Beginning Wire Welding 3.00
Introduces common weld joint in the 1F and 2F positions. Develops foundational skills required for advancement in future coursework. First class in a four course sequence. Audit available.

WLD 136B Basic Wire Welding 3.00
Develops basic welding skills and industry standards as they apply to the wire welding process. Introduces common weld joints in the 2F and 3F positions. Develops foundational skills required for advancement in future coursework. Second class in a four course sequence. Audit available.

WLD 141 Flux-Cored Arc Welding I (Gas Shielded) 3.00
Develops knowledge and manipulative skills in the shielded flux-cored arc welding process in the flat, vertical, horizontal and overhead positions. Department permission required. Audit available.

WLD 142 Flux-Cored Arc Welding II (Self Shielding) 3.00
Develops knowledge and manipulative skills in the self-shielding arc welding process in the flat, vertical, horizontal and overhead positions. Department permission required. Audit available.

WLD 146A Beginning Pipe Welding Practice 3.00
Introduces joining pipe per ASME Section IX and industry standards. First class in a four course sequence. Audit available.

WLD 146B Basic Pipe Welding Practice 3.00
Introduces joining pipe in the 2G position per ASME Section IX Welding Code. Second class in a four course sequence. Audit available.

WLD 151 SMAW Certification Practice: Unlimited Thickness Mild Steel 3.00
Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Department permission required. Audit available.

WLD 152 Wire Welding Certification Practice 6.00
Methods and skills to improve and upgrade welding techniques to a qualification level to become certified in the gas metal arc and flux-cored arc welding processes. Department permission required. Audit available.

WLD 156A Beginning Oxy-Acetylene Welding Practice 3.00
Introduces the joining of plate using oxy-fuel welding. First class in a four course sequence. Audit available.

WLD 156B Basic Oxy-Acetylene Welding Practice 3.00
Introduces the joining of plate using oxy-fuel welding. Second class in a four course sequence. Audit available.

WLD 166A Beginning Weld Practice Metal Sculpting 3.00
Introduce welding processes and weld shop safety. Safety and operation of the oxy-acetylene cutting process as well as an overview of multiple weld processes and their essential variables as related to the fabrication of metal sculpture. First class in a four course sequence. Audit available.

WLD 166B Basic Weld Practice Metal Sculpting 3.00
Reviews, incorporates and builds upon material presented in WLD 166A. Introduces common weld joints as they apply to the fabrication of metal sculpture. Second class in a four course sequence. Audit available.

WLD 176A Beginning Fabrication Welding Practice 3.00
Introduces beginning fabrication of welded structures. First class in a four course sequence. Audit available.

WLD 176B Basic Fabrication Welding Practice 3.00
Introduction to basic fabrication of welded structures. Develops foundational skills required for advancement. Second class in a three course sequence. Audit available.

WLD 186A Beginning Certification Welding Practice 3.00
Introduces preparing and joining plates for certification as per AWSD1.1 Structural Steel Welding codes. First class in a four course sequence. Audit available.

WLD 186B Basic Certification Welding Practice 3.00
Introduces preparing and joining plates in the 2G position for certification as per AWS D1.1 Structural Steel Welding codes. Second class in a four course sequence. Audit available.

WLD 190A Beginning Welding Practice 1.00
Introduces welding and industry standards. Develops foundational skills required for advancement in future coursework. First class in a three course sequence. Audit available.

WLD 190B Basic Welding Practice 2.00
Develops basic knowledge and practice with a welding process and perform welding in accordance with industry standards. Develops foundational skills required for advancement in future coursework. Second class in a three course sequence. Audit available.

WLD 203 Structural Steel Welding Code & Standards 4.00
Develops technical knowledge necessary for the reading and understanding of the AWS Structural Steel Welding Code, D1.1. Purpose of course is to enable student to use a systematic method in the application and understanding of the Structural Steel Welding Code. Audit available.

WLD 210 Aviation Welding 2.00
Develops knowledge and manipulative skills with oxy-acetylene welding, torch brazing, and gas tungsten arc welding processes on steel and aluminum when performing various welds. Training will conform to current FAA 14CFR Part 147 requirements. Prerequisites: Placement into RD 90 or higher; placement into WR 90 or higher; MTH 60 or higher; AMT 101 with a “C” or higher. Audit available.

WLD 211 Auto Collision Repair Welding Aluminum 2.00
Develops knowledge and manipulative skills using the Gas Metal Arc Welding - Pulse transfer process on aluminum performing various welds to I-CAR industry standards. Covers safety, uses, nomenclature, equipment operation and set up and shut down procedures. Audit available.

WLD 216 Miscellaneous Electrodes & Advanced Positions 3.00
Develops knowledge and manipulative skills in the use of a variety of electrodes when welding complex joints and welding positions. Department permission required. Audit available.

WLD 216A Intermediate Welding Practice 3.00
Introduces intermediate shielded metal arc welding process in accordance with AWS D1.1 Structural Steel Welding Codes, and to industry standards. Weld mild steel in the 3F and 4F positions. Third class in a four course sequence. Audit available.

WLD 216B Advanced Metal Arc Welding 3.00
Introduces intermediate shielded metal arc welding, in accordance with AWS D1.1 Structural Steel

WLD 221 Gas Tungsten Arc Welding Mild Steel 3.00 Develops knowledge and manipulative skills while welding common joints in all positions on mild steel with the G.T.A.W. process. Department permission required. Audit available.

WLD 222 Gas Tungsten Arc Welding: Aluminum 3.00 Develops knowledge and manipulative skills while welding common joints in all positions on aluminum with the G.T.A.W. process. Department permission required. Audit available.

WLD 223 Gas Tungsten Arc Welding: Stainless Steel 3.00 Develops knowledge and manipulative skills while welding common joints in all positions on stainless steel with the G.T.A.W. process. Department permission required. Audit available.

WLD 224 Gas Tungsten Arc Welding: (Mild Steel) Pipe I 3.00 Develops knowledge and manipulative skills required to weld mild steel pipe in all positions using the G.T.A.W. process. Department permission required. Audit available.

WLD 225 Gas Tungsten Arc Welding: (Mild Steel) Pipe II 3.00 Develops knowledge and manipulative skills while welding a variety of diameters mild steel pipe in the 6G, (fixed 45 angle) using the G.T.A.W. process. Department permission required. Audit available.

WLD 226A Intermediate Gas Tungsten Arc Welding (Heliarc) 3.00 Introduces gas tungsten arc welding on Aluminum to industry standards. Weld common joint configurations. Develops foundational skills required for advancement in future course work. Third class in a four course sequence. Audit available.

WLD 226B Advanced Gas Tungsten Arc Welding (Heliarc) 3.00 Introduces gas tungsten arc welding on Stainless Steel to industry standards. Weld common joint configurations. Develops foundational skills required for advancement in future course work. Fourth class in a four course sequence. Audit available.

WLD 236A Intermediate Wire Welding 3.00 Introduces welding in the 3F and 3G positions and weld quality as it applies to industry standards in the wire welding process. Develops foundational skills required for advancement in future coursework. Third class in a four course sequence. Audit available.

WLD 236B Advanced Wire Welding 3.00 Introduces welding in 4F and 4G positions. Puddle and heat control in the overhead position. Knowledge of weld quality as it applies to the wire welding process. Develops foundational skills required for “out of position welding.” Fourth class in a four course sequence. Audit available.

WLD 246A Intermediate Pipe Welding Practice 3.00 Introduces joining pipe in the 6G position per ASME Section IX Welding Code. Third class in a four course sequence. Audit available.

WLD 246B Advanced Pipe Welding Practice 3.00 Introduces joining pipe in the 5G position per ASME Section IX Welding Code. Fourth class in a four course sequence. Audit available.

WLD 253 SMAW Certification Practice 3/8” Mild Steel (E6011) 3.00 Practice for the American Welding Society Mild Steel Welding Certification tests using SMAW mild steel electrodes in the horizontal, vertical and overhead positions. Department permission required. Audit available.

WLD 254 SMAW Certification Practice 3/8” Mild Steel (E7018) 3.00 Practice for the American Welding Society Mild Steel Welding Certification tests using SMAW low hydrogen electrodes in the vertical, horizontal and overhead positions. Department permission required. Audit available.

WLD 256 Preparation for Pipe Certification I 3.00 Develops knowledge and skills in the use of melt-through procedures in preparation for pipe welding with the shielded metal arc process. Department permission required. Audit available.

WLD 256A Intermediate Oxy-Acetylene Welding Practice 3.00 Introduces the joining of plate using oxy-fuel welding. Third class in a four course sequence. Audit available.

WLD 256B Advanced Oxy-Acetylene Welding Practice 3.00 Introduces the advanced joining techniques of plate using oxy-fuel welding. Fourth class in a four course sequence. Audit available.

WLD 257 Preparation for Pipe Certification II 3.00 Practice for pipe certification using the S.M.A.W. process to weld pipes in all positions. Department permission required. Audit available.

WLD 261 Basic Fabrication I 6.00 Develops fabrication knowledge and skills in selection and use of layout tools and equipment, to assemble a fabrication project from given specifications. Department permission required. Audit available.

WLD 262 Basic Fabrication II 6.00 Develops knowledge and skills in the proper selection and safe use of hand tools and machinery while working on specific fabrication projects. Department permission required. Audit available.

WLD 263 Welding Technology - Capstone 6.00 Students will demonstrate readiness for welding employment through the development and performance of a comprehensive hands-on welding related Service Learning Project, and the successful completion of an industry based written assessment. Prerequisite: Completion of One-Year Certificate of Completion in Welding Technology. Audit available.

WLD 266A Intermediate Weld Practice Metal Sculpting 3.00 Focuses on producing code quality welds as they apply to the fabrication of metal sculpture. Introduces AWSD1.1 welding code and visual inspection techniques. Third class in a four course sequence. Audit available.

WLD 266B Advanced Weld Practice Metal Sculpting 3.00 Review, practice and strengthen previously learned welding techniques in the fabrication of welded metal sculpture. Fourth class in a four course sequence. Audit available.

WLD 271 Oxy-acetylene Welding Projects 3.00 Practice hand coordination and controlling heat while welding steel with oxy-acetylene equipment using all positions. Department permission required. Audit available.

WLD 276A Intermediate Fabrication Welding Practice 3.00 Introduces intermediate fabrication of welded structures. Develops advanced skills as required for industry. Third class in a four course sequence. Audit available.

WLD 276B Advanced Fabrication Welding Practice 3.00 Introduces advanced fabrication of welded structures. Develops advanced skills as required for industry. Fourth class in a four course sequence. Audit available.

WLD 280A Cooperative Education: Welding - Seminar 1.00 Share experiences with other students and the on-campus instructor in order to develop strategies for successful cooperative work experiences and future employment. Department permission required. Audit available.

WLD 280B Cooperative Education: Welding 3.00 On-the-job experiences which allow for the application and development of knowledge and skills acquired in the on-campus program. Work experiences are offered for variable credit up to a maximum of four credits. Department permission required. Audit available.

WLD 286A Intermediate Certification Welding Practice 3.00 Introduces preparing and joining plates in the 3G position for certification as per AWSD1.1 Structural Steel Welding code. Third class in a four course sequence. Audit available.
plates in the 4G position for certification as per AWSD1.1 Structural Steel Welding codes. Fourth class in a four course sequence. Audit available.

**WLD 290 Submerged Arc Welding 2.00**
Develops knowledge and skills with the submerged arc welding process. Department permission required. Audit available.

**WLD 295 Sculpture Welding II 4.00**
Develops the artist’s knowledge and skills with Oxyacetylene welding and cutting, SMAW (stick) welding, GMAW (wire) welding and TIG (gas tungsten) arc welding processes. Explores metal sculpture design and construction with supporting demonstrations, slides, lectures and films. Completion of ART 293 strongly recommended. No prior welding experience is required. Audit available.

## WRITING

**WR 80 Writing 80 3.00**
Instruction includes basic communication skills, language mechanics, grammar, spelling, sentence structure and paragraph development. Prerequisite: Placement into WR 80 and RD 80. Audit available.

**WR 80C Writing 80C 3.00**
Instruction includes basic communication skills, language mechanics, grammar, spelling, sentence structure and paragraph development. Prerequisites: (ABE 0784 or placement into WR 80) and (ABE 0783 or placement into RD 80) Audit available.

**WR 90 Writing 90 3.00**
Instruction includes sentence structure, paragraph and essay development, and written expression. Students can expect to increase working vocabulary and improve skills in basic communications. Prerequisite: Placement into WR 90 or completion of WR 80 and placement into RD 90 or completion of RD 80 with a “C” or better. Audit available.

**WR 90C Writing 90C 3.00**
Includes instruction in grammar, punctuation, sentence structure, essay development, and critical thinking skills. Improves basic writing skills by learning to use simple and complex sentences in developing a good essay, and by developing critical thinking skills that are used in the writing process. Prerequisites: Placement into WR 90 or completion of WR 80; Placement into RD 90 or completion of RD 80. Audit available.

**WR 91 Basic Grammar 1.00**
Instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other sentence errors. WR 91A and WR 91 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

**WR 91A Basic Grammar 1.00**
Instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other sentence errors. This class is offered in a flexible schedule, lecture/lab format. WR 91A and WR 91 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

**WR 92 Basic Grammar 2.00**
Instruction in grammar including punctuation, sentence structure, and the writing process. This course is offered in a flexible schedule, lecture/lab format. WR 92A and WR 92 are equivalent. Only one may be taken for credit. Prerequisite: WR 80, RD 80 or equivalent placement test scores. Audit available.

**WR 92A Basic Grammar 2.00**
Instruction in grammar including punctuation, sentence structure, and the writing process. WR 92A and WR 92 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

**WR 93 Basic Grammar 3.00**
Overview of some fundamental principles of American English grammar including parts of speech, sentence types, sentence analysis, simple/compound/complex sentences, subject-verb agreement, pronoun usage, selected homonyms, punctuation, capitalization, and avoidance of fragments, run-ons, and other errors. Audit available.

**WR 105 Writing for Scholarships 1.00**
This course is part of a new learning community designed to help students get scholarship funding for college. (This will help our own students pay for PCC classes as well as pay for funding a transfer to a university.) WR 105 deals specifically with writing essays and other written communication required in the competitive scholarship process. Prerequisite: Placement into WR 115 or instructor approval. Corequisites: Concurrent enrollment in CG 105. Audit available.

**WR 115 Introduction to Expository Writing 4.00**
Introduces college level skills in reading critically, exploring ideas, and writing. Students compose essays which support a thesis through structure appropriate to both thesis and reader and learn to revise for clarity and correctness. Prerequisites: Placement into WR 115 or completion of WR 90 or ESOL 262 and (placement into RD 115 or completion of RD 90 or ESOL 260). Audit available.

**WR 117 Introduction to Technical Writing 3.00**
Focuses on the specific writing needs of career programs: procedures, proposals, letters, memoranda, lab reports, work reports. Prerequisite: WR 115 or placement into WR 121. Audit available.

**WR 118 Writing Research Papers 4.00**
Introduces college level skills in reading critically, exploring ideas, and writing. Students compose essays which support a thesis through structure appropriate to both thesis and reader and learn to revise for clarity and correctness. Prerequisites: Placement into WR 115 or completion of WR 90 or ESOL 262 and (placement into RD 115 or completion of RD 90 or ESOL 260). Audit available.

**WR 121 English Composition 4.00**
Focuses on academic writing as a means of inquiry. Uses critical reading, discussion and the writing process to explore ideas, develop cultural awareness and formulate positions. Emphasizes development of a variety of strategies to present evidence in support of a thesis. Prerequisite: Placement into WR 121, or completion of WR 115 and RD 115. Audit available.

**WR 121H English Composition: Honors 4.00**
This is the Honors version. Focuses on academic writing as a means of inquiry. Uses critical reading, discussion and the writing process to explore ideas, develop cultural awareness and formulate positions. Emphasizes development of a variety of strategies to present evidence in support of a thesis. Prerequisite: 3.25 GPA and placement into WR 121, or completion of WR 115 and RD 115. Audit available.

**WR 122 English Composition 4.00**
Continues the focus of WR 121 on academic writing as a means of inquiry with added emphasis on persuasion and argument supported by external research. Uses critical reading, discussion and the writing process to explore ideas, develop cultural awareness and formulate original positions. Emphasizes development of writing and critical thinking through logical reasoning, rhetorical control, independent research and information literacy. Prerequisite: WR 121. Audit available.

**WR 122H English Composition: Honors 4.00**
Honors WR 122. Focuses on argument as a means of inquiry, clear and appropriate writing style, and critical reading. Explores ideas and issues through discussion and writing. Students compose analytical, argumentative, and/or expository essays with appropriate documentation. Students will explore principles of classical and neoclassical rhetoric theory while becoming confident members of the academic community. Prerequisite: WR 121 and 3.25 GPA. Audit available.

**WR 123 English Composition 3.00**
Uses extensive research writing to develop skills in critical analysis and documented argument. Students synthesize their considered response to designated text(s) and/or issues with the reactions of other writers. Includes paraphrasing, summarizing, quoting, and documenting using style appropriate to discipline researched. Prerequisite: WR 122. Audit available.

**WR 180 Composition Conferencing and Tutoring 1.00**
Explores the techniques and philosophies involved in tutoring and conferencing one-to-one with writing students. Students practice skills learned in the classroom as they work in the PCC Writing Center. Audit available.

**WR 185 English Language: Theory and Practice 3.00**
Explores elements and nuances of Standard English and dialects in both theory and practice. Explores historical, social, and current cultural issues of grammar and language use through reading, discussion, and writing. Prerequisites: Placement into WR 121 or WR 115 with a grade of C or better. Audit available.

**WR 222 Writing Research Papers 4.00**
This course uses extensive research writing to develop skills in critical analysis and documented argument. Students synthesize their considered response to designated text(s) and/or issues with the reactions of other writers. Students gain experience locating and using sources
WR 227 Technical and Professional Writing 1 4.00 Introduces technical and professional communications. Students compose, design, revise, and edit effective letters, memos, reports, descriptions, instructions, and employment documents. Emphasizes precise use of language and graphics to communicate complex technical and procedural information safely, legally and ethically. Two instructor conferences required. Prerequisites: WR 121, basic computer literacy, and intermediate word processing skills. Audit available.

WR 240 Creative Writing - Nonfiction 4.00 Introduces creative nonfiction and the writing of essays using creative techniques, such as personal narrative, memoir, nature and travel writing, and literary journalism. Explores the works of established writers for forms, techniques and styles as a context for the production of creative nonfiction for class discussion and analysis. Prerequisite: WR 121. Audit available.

WR 241 Creative Writing - Fiction 4.00 Focusses on writing short fiction for class discussion and analysis in a workshop setting. Explores the techniques, styles, and structures of the writings of established authors, as well as the creative writing process from development of an idea to revision of a manuscript. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

WR 242 Creative Writing - Poetry 4.00 Focusses on the writing and submitting of poetry for class discussion and analysis in a workshop setting. Introduces the techniques, structures, and styles of established poets. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

WR 243 Creative Writing - Script Writing 4.00 Focusses on writing and submitting theatre and film scripts for class discussion and analysis. Studies established writers for techniques, structures, and styles. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available.

WR 244 Advanced Creative Writing - Fiction 4.00 Extends the introduction to the craft of fiction started in WR 241. Explores the creative writing process from development of an idea to revision of a manuscript. Introduces the techniques, structures, and styles of established writers. Prerequisites: WR 241 or instructor permission. Audit available.

WR 245 Advanced Creative Writing - Poetry 4.00 Extends the introduction to the craft of poetry in WR 242. Write poetry, have work critiqued by peers and the instructor, and critique the work of others in a workshop setting. Students without WR 242 may enter the class with instructor permission. Prerequisite: WR 242 and its prerequisite requirements. Audit available.

WR 246 Advanced Creative Writing, Editing & Publishing 4.00 Emphasizes development of craft while introducing basics of editing others' manuscripts and preparing them for publication in a variety of forms, including an annual student literary magazine. May be repeated twice for credit. Prerequisites: (WR 240 or 241 or 242 or 243) and (WR 244 or 245) or instructor permission. Audit available.

WR 247 Advanced Creative Writing - Scriptwriting 4.00 Focusses on writing and submitting both drama and screen scripts for class discussion and analysis, as introduced in WR 243. Continues the study of established writers for forms, techniques, and styles. Includes lecture, small group activities, and conferences. Prerequisite: WR 243 and its prerequisite requirements; or instructor permission. Audit available.

WR 248 Advanced Creative Writing - Nonfiction 4.00 Extends the introduction of creative nonfiction and the writing of essays using creative techniques, such as personal narrative, memoir, nature and travel writing, and literary journalism. Explores the works of established writers for forms, techniques and styles as a context for the production of creative nonfiction for class discussion and analysis. Prerequisite: WR 240 or instructor permission. Audit available.

WR 280A Cooperative Education: Technical Writing Offers technical and professional writing work experience. Is offered for variable credit up to a maximum of five credits. Students receive one credit for every 40 hours of successful work experience. Department permission is required to take this course. Audit available.

WR 9599 Professional Editing 3.00 Introduces different types of editors and edits. Includes extensive editing practice with a wide variety of projects, individual and team based. Also emphasizes the editor's critical role in the production process. Prerequisite: WR 122 or WR 214. Audit available.

WR 9600 Technical and Professional Writing II 3.00 Includes document design, researching, organizing, managing and producing complex technical and professional documents. Prerequisites: Grade of “B” or better in GD 120, WR 227, WR 9599 and WR 9601. Audit available.

WR 9601 Graphics for Technical and Professional Writers 3.00 Applies the graphic art via library catalogs, professional databases and other forms of research. Includes paraphrasing, summarizing, quoting, and documenting, using style appropriate to discipline researched. At least two conferences required. Prerequisite: Completion of WR 122 with a grade of "C" or higher. Audit available.
skills learned in GD 120 to technical and professional writing projects. Combines those skills with skills in electronic layout and design. Prerequisite: Grade of “B” or better in GD 120 and WR 227. Audit available.

**WOMEN’S STUDIES**

**WS 101 Women’s Studies 4.00** Surveys and critically analyzes the position of women in society, in terms of present realities and future possibilities. Provides a framework to connect personal experience with contemporary social and political issues. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**WS 201 Women of the World 4.00** Examines the position of women in society from a cross-cultural perspective. Topics include the process of gender enculturation, women’s lives in foraging, pastoral and agricultural societies and international issues such as female circumcision, infanticide, child brides and honor/dowry deaths. Recommend: WS 101. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**WS 202 Women Working for Change: History, Theory and Practice 4.00** Examines how women have worked to empower girls and women and improve the conditions of their lives. Explores ways that feminist theories have shaped the goals and strategies of social change efforts. Offers an in-depth look at selected topic areas, connects analysis and personal experience, and prepares students to take on effective change agents. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

**Abushakrah, Janice L.**
Instr/Gerontology
BA Theology, Marylhurst U, OR
PHD Sociology, U Colorado Boulder, CO

**Achziger, Mark W.**
Mgr/Assoc Facilities Maint
BS Communication, Concordia U, OR
BS Business Management, Concordia U, OR

**Adams, Hollis J.**
Instr/Math
BS Mathematics, Virginia Poly Inst & State U, VA
MA Mathematics Education, Ohio State U Main Cam, OH

**Aditham, Revathi**
Treasurer Analyst

**Adler, Valerie E.**
Coord/Resource Ctr
BS Applied Design, Portland State U, OR
MS Educational Policy & Mgmt, Portland State U, OR

**Aguila, Oscar R.**
Supv/Campus Custodial Serv

**Alemu, Yohannes**
Financial Svcs Manager II
BS Business Administration, U of Phoenix, AZ

**Alexander, Marilyn**
Instr/Landscape
BS Horticulture, Washington State U, WA

**Allen, Ray A.**
Spec/Employment
BA East Asian Studies, U of Oregon, OR

**Allen, Robert J.**
Instr/ESOL
BA Humanities, Michigan State U, MI
MS Linguistics, Illinois Institute of Tech, IL

**Allen, Sharon J.**
Coord/Interp Transcrib Servs
BA Psychology, Bethel College, MN
MA Teaching & Learning, U of California-San Diego (UCSD), CA

**Allison, Ryan J.**
Instr/Math
BS Mathematics, Portland State U, OR
MS Mathematics, Portland State U, OR

**Alttree, Lawrence E.**
Instr/Air Aviation
CERT Aviation Maintenance Technology, Lane CC, OR
AS Aviation Maintenance Technology, Lane CC, OR

**Alzner, Cathy J.**
Instr/Hist
BA History, Portland State U, OR
MA History, Portland State U, OR

**Anderson, Barry C.**
Instr/Biology
BS Biology, Portland State U, OR
BS General Studies, Portland State U, OR
MS Biology, Portland State U, OR
PHD Environ Sciences & Resources, Portland State U, OR

**Anderson, Clarice G.**
Coord/Fin Aid
BS Elementary Education, Western Oregon U, OR

**Anderson, Kelly J.**
Accountant I
AA General Studies, Portland CC, OR

**Andres, Mark S.**
Instr/Art/Painting
BA English, Williams C, MA

**Annsa, Bethany M.**
Spec/Employment
ASORT Political Science, Salt Lake CC, UT
BA Community Org & Development, Portland State U, OR

**Annsa, Bethany M.**
Spec/Employment
MS Nursing, San Jose State U, CA

**Armontrout, David E.**
Instr/Social Science
AA General Studies, El Camino College, CA
BA History, UCLA, Los Angeles, CA
MA History, Portland State U, OR

**Armstrong, Gayle D.**
Spec/Employment
BA General Studies, U Colorado Boulder, CO
BA Psychology, U Colorado Boulder, CO
MA Psychology, U Colorado Boulder, CO

**Arnett, Adon C.**
Instr/Dev Ed/Engl
BA English, Southern Utah U, UT
MA English, New Mexico State U Main Cam, NM

**Arnold, James M.**
System Analyst
AS Computer Science & Application, Glenville State C, WV
BS Computer Information Systems, U Charleston, WV

**Arthur, Stephen**
Spec/Club and Programs

**Asbra, Kelly P.**
Occu Cluster Trainer

**Atkinson, Jean M.**
Supv/Food Svcs

**Backes, Gabriele R.**
Instr/Chem
BS Chemistry, Ruhr Universitat Bochum
MS Chemistry, Ruhr Universitat Bochum
PHD Chemistry, Ruhr Universitat Bochum

**Bada, Tyrene A.**
Coord/Records
BS Liberal Studies, Portland State U, OR
MLS Library Science, Emporia State U, KS

**Bader, Marilyn J.**
Mgr/Fin Aid Systems
AS Accounting Clerk, Lane CC, OR
BS Public Affairs, U of Oregon, OR
MS Public Affairs, U of Oregon, OR

**Badri, Dorothy A.**
Spec/Acad Advising

**MFA, Film & Video, U Iowa, IA**

**Apodaca, Danny J.**
Spec/Student Res
AA General Education, Rio Hondo College, CA
BA Psychology, Humboldt State U, CA

**Apotheke, Alison M.**
Instr/Comp & Lit
BA Communications, U Massachusetts Amherst, MA
MFA Creative Writing, U Arkansas Main Camp, AR

**Argenti, Lynn S.**
Instr/Nursing
MS Nursing, San Jose State U, CA

**Badri, Dorothy A.**
Spec/Acad Advising

**BA English, Southern Utah U, UT**

**MA English, New Mexico State U Main Cam, NM**
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<th>Name</th>
<th>Title/Department</th>
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<tr>
<td>Bailey, Stedman S.</td>
<td>Coord/First Year Experience</td>
<td>BA Psychology, Seattle U, WA</td>
<td>Portland Social Science, Portland State U, OR</td>
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<td>Bailey, Joseph K.</td>
<td>Instr/Mach Tech</td>
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<td>Instr/ESOL</td>
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<td>BARC Architecture, U of Oregon, OR</td>
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<td>Instr/Math</td>
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<td>Instr/Hist</td>
<td>AAS Small Business Management, Mt Hood CC, OR</td>
<td>BA Art History, Portland State U, OR</td>
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<td>Instr/Comp &amp; Lit</td>
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<td>BA English, San Jose State U, CA</td>
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<td>Barone, Nicole E.</td>
<td>Coordin/Student Conduct &amp; Ret</td>
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<td>AA Admin of Justice, De Anza College, CA</td>
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<td>MA Teaching English to Others, Portland State U, OR</td>
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<td>Bekey, Ronald S.</td>
<td>Instr/Comp Application Systems</td>
<td>BS Biology, U of Southern California, CA</td>
<td>BS General Studies, Eastern Oregon U, OR</td>
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<td>Becker, Esperanza</td>
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<td>Bedient, Sonya F.</td>
<td>Counselor</td>
<td>BA Psychology, Western Washington U, WA</td>
<td>MA Counseling, Psychology, Lewis &amp; Clark College, OR</td>
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<tr>
<td>Bedient, Sonya F.</td>
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<td>Mgr/Employee/Labor Relations</td>
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<td>Instr/Vis Arts</td>
<td>AA Art, College of DuPage, IL</td>
<td>MA, Studio Arts, N Illinois U, IL</td>
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<td>Bernunzio, Katherine A.</td>
<td>Instr/Dev Ed/Math</td>
<td>BS Mathematics, Portland State U, OR</td>
<td>MED Education, Lewis &amp; Clark College, OR</td>
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<td>Instr/Art History</td>
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<td>BA Foreign Language, Washington State U, WA</td>
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PORTLAND COMMUNITY COLLEGE ■ 2012-2013

Drawing on the provided data, the table above showcases the diversity of roles and backgrounds among faculty and staff at Portland Community College, encompassing a wide range of disciplines and educational experiences.
Blake, Ginevra J.
Coир/Bus Trng & Ed Dev
MA Rehabiliation Administration, U of San Francisco, CA

Blanchette, Linda M.
Staff & Org/Dev Facilitator
BA French, U New Hampshire, NH
CERT Tescal, Portland State U, OR

Blanco Colmenares, Ana C.
Spec/Employment
BBA Business Admin, Simon Rodriguez Ntl Exp U, VNZ

Bledsoe, Lisa S.
Dir/Human Resources
BS Poltical Science, Portland State U, OR
CERT Human Resource Management, Portland State U, OR

Blumenthal, Pamela S.
Dir/Alt Programs
MA French, U of Oregon, OR
MA Counseling Psychology, Lewis & Clark College, OR

Boehmer, Jennifer
Mgr/Marketing Asst
BA Mass Media Communication, Linfield College, OR

Boehnke, Amy S.
Instr/Dev Ed/ABE
BA Journalism, Drake U, IA
MA English, Drake U, IA

Boeschen, Charlotte M.
Instr/ Spanish
MA Spanish, Portland State U, OR

Bogart, William C.
Instr/Dev Ed
BA English, U of Minnesota, MN
MA English, Portland State U, OR

Boggs, Michael A.
Instr/Phys Ed
BS Exercise & Sport Science, Oregon State U, OR
MBA Technology Management, U of Phoenix, AZ

Bonner, Robert W.
Instr/Diesel Serv Mech
AS Diesel Service Technology, Oregon Inst of Technology, OR

Boofer, Tonya S.
Dir/Community Ed
BS Forestry, U of IL @Urbana-Champaign, IL
MA Liberal Arts, Stanford U, CA

Bordarding, Steven M.
Mgr/Facilities Project & Arch

Bowles, James E.
Dir/Skill Ctr
BS Social Science, Western Oregon U, OR

Boyd, Leslie K.
Instr/Dev Ed
MA Teaching: English, Portland State U, OR

Boyd, Rhonda M.
Title III Project Director

Boyd-Bunch, Merry L.
Spec/Learning Skills

Boyle-Galestiantz, Traci R.
Coord/Women’s Resource
BS Women’s Studies, Portland State U, OR
MSW Social Work, Portland State U, OR

Brackett, David M.
Instr/Chem
BS Chemistry, California State U-Stanislaus, CA
PhD Chemistry, U of California/Davis, CA

Bradach, Kathleen M.
Spec/Acad Advising
BS Elementary Education, Oregon State U, OR

Brask, Gerald
Instr/Paralegal
BA Social Science, N Illinois U, IL
JD Law, U North Dakota/Main Camp, ND

Brennan, Patsy L.
Accountant II
AS Accounting, Oregon Inst of Technology, OR

Brewer, Daniel
Advisor/Fin Aid
BA History, E Connecticut State U, CT
BA Social Science, E Connecticut State U, CT
MBA Business Administration, U New Haven, CT

Brewster, Elizabeth
Instr/Landscape
BA Humanities, U of S Florida New College, FL
BS Horticulture, U Maryland C Park, MD

Bridgewater, Rachel A.
Rel Librarian

Briggs, Nancy C.
Instr/Biology
BS Biology, Portland State U, OR
MS Biology, Portland State U, OR

Broderick-Sanchez, Carolina
Mgr/TRIO Program
MPA Public Administration, Portland State U, OR

Broich, Regina C.
Coord/Fin Aid
BA English, U of Oregon, OR

Brown, Janice M.
Spec/Acad Advising
BA English, U of Texas Austin, TX

Brown, Martin J.
Supervisor/TSS

Brown, Mary N.
Instr/Comp App/Office Syst
BA Urban Studies, Eckerd C, FL
MBA Management, UCLA Los Angeles, CA

Brown, Sandi K.
Instr/Nursing
BS Nursing, Kansas City Cmty JC, KS
BSN Nursing, Webster C, MO
MS Education, Pittsburg State U, KS

Brown, Sheila G.
Instr/Comp & Lit
BA English, Florida State U, FL
MA English, Florida State U, FL
PhD English, Florida State U, FL

Brown, Wendy R.
Spec/Employment

Bruno, William G.
Instr/Bus Admin
MBA Finance/Marketing, Rutgers State U NJ Newark, NJ

Brunton, Gwendolyn L.
Spec/Sr Employment
BA Fine Arts, Southern Oregon U, OR
BA Humanities, Southern Oregon U, OR
MA Counseling, Portland State U, OR

Bruss, Linda M.
Instr/Comp App/Office Syst
BS Business Administration, Portland State U, OR
MS Business Education, Portland State U, OR

Bryant, Kristin L.
Instr/Comp & Lit
BA English, U of Puget Sound, WA
MA English, U Colorado Boulder, CO
DA English, Idaho State U, ID

Bryant, Susan G.
Spec/Employment
BS Recreation & Park Mgmt, U of Oregon, OR

Buesseler, John
Spec/Instructional Comp
BS Electrical Engineering, California State U-
Long Beach, CA
MA Ed Policy,Foundation & Admin, Portland State U, OR

Burns, Robert J.
Instr/Dev Ed/Engl
BS Liberal Studies, Oregon State U, OR
MAT Education, U of Portland, OR

Burwell, Robin A.
Spec/Student Res
MS Industrial Relations, U of Oregon, OR

Buseman-Carlstrom, Tracy L.
Carrigan, Kathleen E.
Instr/Chem
BS Chemistry, Bridgewater State C, MA
MS Chemistry, U Colorado Boulder, CO

Carsillo, Mary Ann
Instr/World Lang/Spanish
BA English, Loyola Marymount U, CA
MA Spanish, U of California/Irvine, CA
PHD Spanish, U of California/Irvine, CA

Caruso, Maria C.
Instr/Comp & Lit
MFA English, U of California/Irvine, CA

Carver, Dorothy
Instr/Dev Ed/Math
BA French, U of IL@Urbana-Champaign, IL
BA Elementary Education, U of IL@Urbana-Champaign, IL
MED Reading Specialist, U of IL@Urbana-Champaign, IL
MA Mathematics Education, Fresno Pacific College, CA

Cary, Ann E.
Instr/Math
BA Mathematics, Luther C, IA
MS Mathematics, Portland State U, OR

Casciato, Nancy A.
Instr/Comp & Lit
BA English, Portland State U, OR
MA English, Portland State U, OR
PHD English, U of Oregon, OR

Casto, Estella K.
Instr/Comp & Lit
AB French, Ohio U, OH
AB Political Science, Ohio U, OH
MA English, Ohio U, OH
PHD English, Ohio State U Main Office, OH

Cawley, Kendra C.
Div Dean
BA Biology, Carleton C, MN
MS Genetics, U Connecticut, CT
PHD Biological Sciences, Washington U St Louis, MO

Chadwick, Laurie A.
Coord/Education
BS Social Science, Portland State U, OR
BS Sociology, Portland State U, OR

Chairsell, Christine
VP/Academic & Student Affairs
BA Political Science, U of NV/Las Vegas, NV
MA Political Science, U of NV/Las Vegas, NV
EDD Educational Leadership, U of NV/Las Vegas, NV

Chambers, Janice H.
Instr/Mech Eng
AAS Mechanical Engineering Techno, Portland CC, OR

Chambers, Virginia K.
Instr/Medical Assisting
BS Sociology, Portland State U, OR
MA Health Admin & Policy, U Phoenix, AZ

Chapman, Steven C.
Spec/Employment
BA Spanish, Beloit C, WI
BA French, Beloit C, WI

Chatterson, Cole T.
Instr/Bus Admin
BS Business, George Fox U, OR
BS Information Tech, George Fox U, OR
MBA Business Administration, George Fox U, OR

Chester, Catherine C.
Mgr/Community Relations
BA Government & International Std, U Notre Dame, IN
MA Public Relations, U of Southern California, CA

Christain, Phillip T.
Coord/Acad Advising
BS Recreation & Park Mgmt, U of Oregon, OR
MED Educational Administration, Grand Canyon U, AZ

Christian, Virginia D.
Asst Coord/Women's Resource
BA Communication, Maryhurst U, OR
MA Counseling Psychology, Pacifica Graduate Inst, CA

Christiansen, Janet E.
Mgr/Contract and Grant Acctgl

Christofili, Monica R.
Instr/DE Reading & Writing
MA English, San Diego State U, CA

Christopher, Connie S.
Instr/Welding

Christopher, Susanne M.
Instr/Health Ed
BS Health Education, Oregon State U, OR
MED Health Education, Oregon State U, OR
EDD Adult Leadership & Post Sec Ed, Portland State U, OR

Chulufas, Roxanne L.
International Stdnt Advisor
AA Oregon Transfer, Portland CC, OR

Chung, Cau
Mgr/Bond Accounting
BS Business/Accounting, Portland State U, OR
MBA Business Administration, Portland State U, OR

Chung, Wing-Kit D.
VP/Admin Srvc
BA Business, Southern Oregon U, OR
MBA Business Administration, Oregon State U, OR

Claussn, Daniel L.
Instr/ESOL
MA TESOL, Portland State U, OR

Clay, Charles R.
Coord/Employment Spec
BA Economics, U of East Anglia, Norwich, UK
BA Social Science, U of East Anglia, Norwich, UK

Cloud, Katrina M.
Spec/Apprenticeship & Training
### FACULTY & STAFF

<table>
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<tr>
<th>Name</th>
<th>Degree/Title</th>
<th>Institution</th>
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<tr>
<td><strong>BBA Business Administration, Amer Intercontinental U, GA</strong></td>
<td>MED, Instructional Tech, Amer Intercontinental U, GA</td>
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<tr>
<td><strong>Clubb, Amy E.</strong></td>
<td>Instr/CAS</td>
<td>BA Economics &amp; Business, Westmont College, CA</td>
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<td>MS Ed Policy, Foundation &amp; Admin, Portland State U, OR</td>
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<td><strong>Coakes, Dawn M.</strong></td>
<td>Instr/Radiol Tech</td>
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<td><strong>Cochrane, Deborah J.</strong></td>
<td>Coord/Port Teacher Prog</td>
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<td>BA English, U of Oregon, OR</td>
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<td><strong>Cohen, Andrew D.</strong></td>
<td>Instr/Creative Wr/Comp&amp;Lit</td>
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<td>BA English, Tufts U, MA</td>
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<td>MFA Creative Writing, U of Michigan, MI</td>
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<td><strong>Cole, Heather</strong></td>
<td>Instr/Dev Ed/Engl</td>
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<td>BA English Literature, U of California/Berkeley, CA</td>
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<td>MA English Literature, San Francisco State U, CA</td>
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<td><strong>Coleman, Gerald W.</strong></td>
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<td>Instr/Econ</td>
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<td>MA Economics, George Mason U, VA</td>
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<td><strong>Colorafi, Rose Mary A.</strong></td>
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<td>AA Liberal Arts, CUNY Kingsborough CC, NY</td>
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<td><strong>Connelly, Wendy J.</strong></td>
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<td>BA Aquatic Biology, U of California-Santa Barbara, CA</td>
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<td>AS Electronic &amp; Computer Eng Tech, Santa Barb City C, CA</td>
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<td>BS Geography, U of Oklahoma, OK</td>
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<td>BA English, Virginia Poly Inst &amp; State U, VA</td>
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<td>MLS Library &amp; Information Science, N Carolina Cntl U, NC</td>
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<td><strong>Cornea-Hasegan, Dorina M.</strong></td>
<td>Instr/Microelectronics</td>
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<td>MS Industrial Technology, Purdue U, IN</td>
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<td><strong>Countryman-Jones, Lisa G.</strong></td>
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<td><strong>Cowan, Lutgarda B.</strong></td>
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<td><strong>Crawford, Deborah A.</strong></td>
<td>Mgr/Auxiliary Services</td>
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<td><strong>Creger, Michael W.</strong></td>
<td>Instr/Art</td>
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<td>BFA Sculpture, Pacific NW College of Art, OR</td>
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<td>MFA Art, Portland State U, OR</td>
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<td><strong>Crofts, James H.</strong></td>
<td>Mgr/Accounting Services</td>
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<td>BS, Accounting, Utah State U, UT</td>
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<td><strong>Cruse, Michele M.</strong></td>
<td>Mgr/Accounts Receivable</td>
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<td>AS General Studies CC Allegheny Co Cntl Off, PA</td>
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<td>BA Public Admin, U of Pittsburgh, PA</td>
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<td><strong>Curren, Sandra R.</strong></td>
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<td>AAS Dental Hygiene, Portland CC, OR</td>
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<td>BS Dental Hygiene, Oregon Inst of Technology, OR</td>
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<td>MSE Post Secondary &amp; Adult Ed, Capella U, MN</td>
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<td><strong>Currey, Louissa M.</strong></td>
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<td><strong>Cutsforth, Cecelia M.</strong></td>
<td>Instr/Graphic Design</td>
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<td>BFA Visual Arts, Oregon State U, OR</td>
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<td><strong>Cypher, Jackilyn E.</strong></td>
<td>Instr/EMT</td>
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<td>AS Nursing, RN, Imperial Valley College, CA</td>
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<td><strong>Daugherty, Jana L.</strong></td>
<td>Spec/Comm Resource</td>
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<td>BA Literature, New College of Florida, FL</td>
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<td><strong>Davidson, Daniel A.</strong></td>
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<td>AA Oregon Transfer, Portland CC, OR</td>
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<td><strong>Davis, Angelina M.</strong></td>
<td>Counselor</td>
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<td>BS Psychology, Portland State U, OR</td>
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<td><strong>Davis, Daniel J.</strong></td>
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<td>MA English, Georgetown U, DC</td>
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<td><strong>Davis, Dawn H.</strong></td>
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<td>BS Zoology, Ohio State U Main Camp, OH</td>
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<td><strong>Davis, Kimberley C.</strong></td>
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<td><strong>Davis, Mary T.</strong></td>
<td>Coord/Bus Trng &amp; Ed Dev</td>
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<td><strong>Davis-Cainion, Regina G.</strong></td>
<td>Spec/Student Res</td>
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<td><strong>Dawson, James</strong></td>
<td>Spec/Trainer Education</td>
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<td>MED Adult Education (ABE or GED), Oregon State U, OR</td>
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<td><strong>Day, Christina L.</strong></td>
<td>Mgr/Budget</td>
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<td>AA Business Technology, Central Oregon CC, OR</td>
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<td>BA Management &amp; Org Leadership, George Fox U, OR</td>
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<td><strong>DeAngelis, Patricia A.</strong></td>
<td>Instr/Comp App/Office Systems</td>
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<td>MED Education, U of Alaska/Southeast, AK</td>
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<td><strong>DeGrauw, Edward A.</strong></td>
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<td>BS Biology, Portland State U, OR</td>
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<td>PHD Enviro Sciences &amp; Resources, Portland State U, OR</td>
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<td><strong>Del Val, Aurora T.</strong></td>
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<td>BA English Literature, San Francisco State U, CA</td>
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<td><strong>DeMott, Jeffrey J.</strong></td>
<td>Coord/Fin Aid</td>
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<td><strong>Degman, Linda M.</strong></td>
<td>Assoc Dir/Bond Project</td>
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<td><strong>Dempsey, Keith</strong></td>
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<td><strong>Dennis, Doree D.</strong></td>
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<td>BS Biology, U of Oregon, OR</td>
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MA Tesol, Sch Intrnatl Training, VT

Didenko, Irina M.
Instr/Math
BS Mathematics, Leningrad A I Herzen Inst, RU
MED Mathematics, Leningrad A I Herzen Inst, RU

Diniz, Luciana S.
Instr/ESOL
MA Applied Linguistics, Georgia State U, GA
PHD Applied Linguistics, Georgia State U, GA

Dins, Kathryn M.
Div Dean
MS Ed Policy,Foundation & Admin,Portland State U, OR
PHD Education, Oregon State U, OR

Dionne, Scott S.
Instr/Comp & Lit
BA Political Science, Gonzaga U, WA
MA English, Eastern Washington U, WA
MA Rhetoric & Composition, Eastern Washington U, WA

Dittrich, William A.
Instr/Physics
BS Physics, Western Washington U, WA
MS Physics, U Colorado Boulder, CO
MS Aeronautical Engineering, U of Washington, WA

Dodean, Rozalia A.
Instr/Chemistry
BS Chemistry, Portland State U, OR
MS Chemistry, Portland State U, OR

Dodge, Kenneth E.
Mgr/Workforce Dev
BA Political Science, U of Oregon, OR
MS Ed Policy,Foundation & Admin, Portland State U, OR

Donahue, Timothy J.
Dir/Fac Management Services

Donohue, May L.
Spec/Acad Advising
BA Communication Studies, Portland State U, OR

Dornfeld, Jessica E.
Spec/Marketing
AB Psychology, Washington U St Louis, MO
AB Marketing, Washington U St Louis, MO

Dougherty, Daniel J.
Instr/Comp Info Sys
BS Mathematics, SUNY Stony Brook, NY
MS Operations Research, U of California/Berkeley, CA

Dow, Jo Lynn
Spec/Student Res
MS Ed Policy,Foundation & Admin, Portland State U, OR

Dowd, Tammy L.
Counselor
BA Communicative Disorders, San Diego State U, CA
MS Rehabilitation Counseling, San Diego State U, CA

DuBarry, Michelle E.
Grants Officer

BA Political Science, Montana State U/Bozeman, MT
MA Political Science, Portland State U, OR

Dulany, Marjorie L.
Instr/Nursing
BS Nursing, U of Portland, OR
MS Nursing, U of Portland, OR

Dumas, Leah M.
Spec/Employment

Duncan, Colleen M.
Instr/Nursing
BS Nursing, Oregon Health Science U, OR
MS Nursing, Oregon Health Science U, OR

Dundorf, Christyn
Instr/Child Dev/EEFS
MS Education & Human Development, U of Rochester
PHD Human Development, U of Rochester

Dunnington, Russell J.
Instr/Diesel Serv Mech

Dwyer, DaNene K.
Mgr/Workforce Dev

Dyer, Heidi L.
Instr/Dance
BA Dance, Columbia C, IL
MFA Dance, U of Oregon, OR

Dykes, Sarah Z.
Spec/Student Res
BA Human Services, U of Oregon, OR

Earley, James K.
Counselor
BA English, U of Puget Sound, WA
MA English, U of Arizona, AZ
MA English, New Mexico State U Main Camp, NM
MA Counseling & Ed Psych, NM State U Main Camp, NM

Earl, Sally N.
Coor/Curriculum
BA Organization & Management, George Fox U, OR
EDUCATIONAL ADMIN, Lewis & Clark College, OR

Eaton, Gary R.
Mgr/Campus Tech Serv
BS Business Administration, Oregon State U, OR

Eby, Linda L.
Instr/Nursing
BS Nursing, Oregon Health Science U, OR
MN Nursing, Oregon Health Science U, OR

Eden, Linda J.
Dir/Aux Services
BS Institutional Mgmt & Dietetics, Oregon State U, OR

Edic, Jana L.
Instr/Speech
BS Communication Studies, Portland State U, OR
MS Communication Studies, Portland State U, OR

Edwall, Deborah A.
Instr/Reading Writing

Edwards, Christopher N.
Div Dean
MS Communication, Purdue U, IN

Edwards, Diane T.
Instr/Math
BS Mathematics, U of Utah, UT
MA Mathematics, California State U-Fullerton, CA

Edwards, Heidi D.
Coord/Student Systems Support
BA Anthropology, Purdue U, IN
MS Speech Communication, Portland State U, OR

Egan, Christine L.
Mgr/Community Relations
BA Art, Linfield College, OR
BA Political Science, Linfield College, OR
MA Urban & Regional Planning, Portland State U, OR

Ehls, Jacqueline M.
Instr/Art
AA Undeclared, Portland CC, OR
BFA Painting, Pacific NW College of Art, OR
MFA Art, U of NV/Las Vegas, NV

Ehrenhaus, Charmagne D.
Div Dean
BA Speech, U of Minnesota, MN
MA Speech Communication, U of Minnesota, MN

Eid, Marlene
Instr/Psych
MA Psychology, Portland State U, OR

Elardo, Justin
Instr/Econ
BA Economics, SUNY C Cortland, NY
MS Economics, U of Utah, UT
PHD Economics, U of Utah, UT

Ellerton, Amanda T.
Coor/Stud Ldrshp
BA Communication Arts, Pacific Lutheran U, WA
MA History, Portland State U, OR

Ellerton, Chelsea T.
Spec/Club and Programs

Elliott, Jacqueline M.
Counselor
MS Counseling, Portland State U, OR

Ellis, Diana L.
Instr/Business Administration
BS Education, Henderson State U, AR
<table>
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<tr>
<th>Name</th>
<th>Title/Department</th>
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| Elsasser, Sarah K.    | Spec/Student Res                                     | BS Psychology, Portland State U, OR  
MA Counseling Psychology, Lewis & Clark College, OR                                      |
| England, Eileen L.    | Accountant II                                        | MED Student Personnel Admin, Western Wash U, WA                                            |
| Esary, Kendi R.       | Coord/Student Leadership                             | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Eshleman, Lucinda L.  | Coord/Acad Advising                                  | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Espindola, Norberto T.| Mgr/HEP Program                                      | BA Interdisciplinary Studies, Heritage College, WA                                           |
| Espinosa, Jorge E.    | Instr/Speech                                         | BS Music, Lewis & Clark College, OR  
MA Speech Communication, Oregon State U, OR                                                |
| Estrella, Jeremy J.   | Instr/Speech                                         | BA Speech Comm, California State U-Long Beach, CA  
MA Comm Studies, California State U-Long Beach, CA                                          |
| Fan, Lee S.           | Coord/Culinary Asst Prov                             | MS Education, Portland State U, OR                                                        |
| Farnum, John C.       | Instr/Philosophy                                     | BS Philosophy, U of Oregon, OR  
MA Philosophy, San Diego State U, CA  
PHD Philosophy, Florida State U, FL                                                          |
| Farrell, Michael F.   | Instr/Elec Eng                                       | BS Computer Engineering, Rose Hulman Inst Tech, IN  
MS Electrical Engineering, Washington State U, WA                                           |
| Fasulo, James A.      | Spec/Acad Advising                                   | BA English, Villanova U, PA                                                                  |
| Fedorkova-Felty, Larisa| Spec/Employment                                     | BA International Relations, Moscow State U  
MA International Relations, Moscow State U  
MFA International Mgmt, Monterey Inst Int'l Stud, CA                                       |
| Fellman, Laura S.     | Instr/Physics                                        | BS Physics, Portland State U, OR  
MS Physics, Portland State U, OR                                                             |
| Fennell, Mark L.      | Mgr/Safety & Risk                                    |                                                                                           |
| Fennberg, Linda A.    | Instr/Biology                                        | BS Biology, Simon Fraser U, CN  
MS Entomology, Cornell U, NY                                                                   |
| England, Eileen L.    | Accountant II                                        | MED Student Personnel Admin, Western Wash U, WA                                            |
| Esary, Kendi R.       | Coord/Student Leadership                             | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Eshleman, Lucinda L.  | Coord/Acad Advising                                  | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Estrella, Jeremy J.   | Instr/Speech                                         | BA Speech Comm, California State U-Long Beach, CA  
MA Comm Studies, California State U-Long Beach, CA                                          |
| Fan, Lee S.           | Coord/Culinary Asst Prov                             | MS Education, Portland State U, OR                                                        |
| Farnum, John C.       | Instr/Philosophy                                     | BS Philosophy, U of Oregon, OR  
MA Philosophy, San Diego State U, CA  
PHD Philosophy, Florida State U, FL                                                          |
| Farrell, Michael F.   | Instr/Elec Eng                                       | BS Computer Engineering, Rose Hulman Inst Tech, IN  
MS Electrical Engineering, Washington State U, WA                                           |
| Fasulo, James A.      | Spec/Acad Advising                                   | BA English, Villanova U, PA                                                                  |
| Fedorkova-Felty, Larisa| Spec/Employment                                     | BA International Relations, Moscow State U  
MA International Relations, Moscow State U  
MFA International Mgmt, Monterey Inst Int'l Stud, CA                                       |
| Fellman, Laura S.     | Instr/Physics                                        | BS Physics, Portland State U, OR  
MS Physics, Portland State U, OR                                                             |
| Fennell, Mark L.      | Mgr/Safety & Risk                                    |                                                                                           |
| Fennberg, Linda A.    | Instr/Biology                                        | BS Biology, Simon Fraser U, CN  
MS Entomology, Cornell U, NY                                                                   |
| England, Eileen L.    | Accountant II                                        | MED Student Personnel Admin, Western Wash U, WA                                            |
| Esary, Kendi R.       | Coord/Student Leadership                             | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Eshleman, Lucinda L.  | Coord/Acad Advising                                  | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Estrella, Jeremy J.   | Instr/Speech                                         | BA Speech Comm, California State U-Long Beach, CA  
MA Comm Studies, California State U-Long Beach, CA                                          |
| Fan, Lee S.           | Coord/Culinary Asst Prov                             | MS Education, Portland State U, OR                                                        |
| Farnum, John C.       | Instr/Philosophy                                     | BS Philosophy, U of Oregon, OR  
MA Philosophy, San Diego State U, CA  
PHD Philosophy, Florida State U, FL                                                          |
| Farrell, Michael F.   | Instr/Elec Eng                                       | BS Computer Engineering, Rose Hulman Inst Tech, IN  
MS Electrical Engineering, Washington State U, WA                                           |
| Fasulo, James A.      | Spec/Acad Advising                                   | BA English, Villanova U, PA                                                                  |
| Fedorkova-Felty, Larisa| Spec/Employment                                     | BA International Relations, Moscow State U  
MA International Relations, Moscow State U  
MFA International Mgmt, Monterey Inst Int'l Stud, CA                                       |
| Fellman, Laura S.     | Instr/Physics                                        | BS Physics, Portland State U, OR  
MS Physics, Portland State U, OR                                                             |
| Fennell, Mark L.      | Mgr/Safety & Risk                                    |                                                                                           |
| Fennberg, Linda A.    | Instr/Biology                                        | BS Biology, Simon Fraser U, CN  
MS Entomology, Cornell U, NY                                                                   |
| England, Eileen L.    | Accountant II                                        | MED Student Personnel Admin, Western Wash U, WA                                            |
| Esary, Kendi R.       | Coord/Student Leadership                             | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Eshleman, Lucinda L.  | Coord/Acad Advising                                  | BS Sociology, Portland State U, OR  
MED Education, Portland State U, OR  
MLS Library Science, Emporia State U, KS                                                   |
| Estrella, Jeremy J.   | Instr/Speech                                         | BA Speech Comm, California State U-Long Beach, CA  
MA Comm Studies, California State U-Long Beach, CA                                          |
| Fan, Lee S.           | Coord/Culinary Asst Prov                             | MS Education, Portland State U, OR                                                        |
| Farnum, John C.       | Instr/Philosophy                                     | BS Philosophy, U of Oregon, OR  
MA Philosophy, San Diego State U, CA  
PHD Philosophy, Florida State U, FL                                                          |
| Farrell, Michael F.   | Instr/Elec Eng                                       | BS Computer Engineering, Rose Hulman Inst Tech, IN  
MS Electrical Engineering, Washington State U, WA                                           |
BA Psychology, Clemson U, SC
MS Geography, Portland State U, OR

Friedman, Miriam I.
Dir/Grant Development
BA Psychology, U Massachusetts Amherst, MA
MS Ed Policy, Foundation & Admin, Portland State U, OR

Friedrich, Kenneth L.
Instr/Chemistry
BS Biochemistry, Seattle Pacific U, WA
PHD Biochemistry, U of Arizona, AZ

Fu, Shelton
Instr/Microelectronics
PHD Materials Science & Engr, U Pennsylvania, PA

Fukuyama, Kathy H.
College Architect
AB Architecture, Washington U St Louis, MO
MA Architecture, Washington U St Louis, MO

Funk, Matthew W.
Instr/Math
BS Mathematics, U of Portland, OR
MS Mathematics, Portland State U, OR

Galba-Machuca, Debra M.
Instr/Biology
ZDCH Chiropractic Med, Palmer Clg of Chrprctc/West, CA
BS Biology, Excelsior College, NY

Garber, Susan M.
Instr/Alcohol & Drug Counsel
BA Psychology, Portland State U, OR
MED Counseling, Lewis & Clark College, OR

Garcia, Braulio A.
Vocational Trainer
BS Human Development, Warner Pacific College, OR

Garcia, Michelle A.
Vocational Trainer

Garcia, Veronica R.
Dean of Student Affairs
MED Educational Leadership, Northern Arizona U, AZ

Garcia-Chitwood, Jean L.
Dir/Intructional Programs
BS Speech Pathology, Portland State U, OR
MS Post Secondary, Adult, & Conf Ed, Portland State U, OR

Garcia-McMillian, Darilis
Mgr/Registration Svcs
BA Communication, U of Michigan, MI
MA College Student Personnel, E Michigan U, MI

Gardner, Renee M.
Instr/Psych
MS Education Counseling, Portland State U, OR

Garman, Tracey L.
International Stdtl Advisor

Garnica, Eduardo
Spec/Employment
BA History, U Kansas, KS
BA Latin American Studies, U Kansas, KS
BA Spanish, U Kansas, KS

Garrison, Kirk A.
Instr/Bldg Trades
BA English, Brigham Young U, UT
BA History, Brigham Young U, UT
MA History, Portland State U, OR

Gatewood, Algie C.
Campus President/Cascade
BA History, Livingstone C, NC
BA Social Science, Livingstone C, NC
MED Higher Education, Appalachian State U, NC
EDD Adult & Comm College Educ, NC State U Raleigh, NC

Geiger, Charles W.
Supv/Campus Custodial Serv

George, Anthony L.
Mgr/Print Center

Gerber, Linda A.
Campus President/Sylvania

Gerstner, Gregory
Instr/Mech Eng
BS Mechanical Engineering, U of Michigan, MI
MS Environmental Engineering, Michigan Tech U, MI

Gettmann, Linda M.
Associate Dean/Student Develop
BA History, Portland State U, OR
AAS Medical Record Technology, Portland CC, OR
MS Management, Marylhurst U, OR

Gieber, Jon S.
Instr/Alcohol & Drug Counsel
BS Psychology, U of Oregon, OR
MS Counseling, U of Oregon, OR

Gillette, Susan D.
System Analyst

Giustini, Irene
Div Dean
BS Microbiology & Immunology, McGill U, CN
MHA Health Care Administration, U Ottawa, CN

Givens, Lucas A.
Spec/Student Resource
BS Sociology, Appalachian State U, NC

Goble, Colin E.
Instr/Comp Sci
MA Computer Science, U of California/Berkeley, CA

Goekjian, Jane E.
Instr/Comp & Lit
MA English, Portland State U, OR

Goldberg, Bonni E.
Spec/Admissions
BA Writing, Johns Hopkins U, MD
MA Writing, Johns Hopkins U, MD

Goldenberg, Haydee H.
Spec/Student Resource

Goldman, David P.
Instr/Elec Eng
BS Electrical Engineering, Boise State U, ID
MS Engineering, Boise State U, ID

Goldy, Loretta A.
Div Dean
AA Secretarial Science, Fullerton College, CA
BA History, California State U-Fullerton, CA
MA History, California State U-Fullerton, CA

Golledge, Cynthia P.
Instr/Psych
BS Psychology, Missouri S State C, MO
PHD Psychology, U Tennessee/Knoxville, TN

Gonzalez, Alicia
Asst Coord/Women's Res/5%Bil
BA Philosophy, Portland State U, OR
MED Counseling, Lewis & Clark College, OR

Gonzalez, Jose A.
Spec/Comm/Res

Goodwin, Kenneth D.
Dir/Public Safety

Googins, John L.
Mgr/Workforce Dev
BA Anthropology, U of Montana, MT

Goulard, Frank
Instr/Math
MS Education, Oregon State U, OR

Gramlich, Peter
Instr/Architecture/Design
BS Architecture, Pennsylvania State U, PA
MAR Architecture, Arizona State Univ. Main, AZ

Gray, Sylvia H.
Instr/Hist
AS Business Administration, Portland CC, OR
BA History, Portland State U, OR
MA History, Portland State U, OR

Gregorio, Patricia A.
Instr/Dev Ed/Engl
BA Art, U of Redlands, CA
BA Philosophy, U of Redlands, CA
BA English, U of Redlands, CA
MA English, San Francisco State U, CA
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<th>Name</th>
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<td>Gregory, Keith A.</td>
<td>Mgr/Maintenance &amp; Grounds</td>
<td>BS Aeronautics, St Louis U Main Camp, MO</td>
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<td>Gregory, Sally</td>
<td>Mgr/Financial Reporting</td>
<td>BA Accounting, Western Washington U, WA</td>
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<td>Greiner, Anthony E.</td>
<td>Ref Librarian</td>
<td>BA Music Education, James Madison U, VA</td>
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<td>MA Music, U Iowa, IA</td>
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<td>Grifo, Heather L.</td>
<td>Instr/Business Administration</td>
<td>BBA Business Administration, Loyola Marymount U, CA</td>
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<td>MBA Business Administration, Loyola Marymount U, CA</td>
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<td>Grimm, Teri O.</td>
<td>Instr/Bus Admin</td>
<td>BBA Business Administration, U of Montana, MT</td>
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<td>Gross, Allison V.</td>
<td>Instr/Comp &amp; Lit</td>
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<td>Gruber, Linnea N.</td>
<td>Instr/Graphic Design</td>
<td>AA Art, Cabrillo College, CA</td>
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<td>BS Graphic Design, San Jose State U, CA</td>
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<td>Guevara, Heather L.</td>
<td>Instr/Social</td>
<td>AA Yakima Valley CC, WA</td>
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<td>BA Psychology, Bethany U, CA</td>
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<td>Guineau, Cecelia E.</td>
<td>Instr/Dev Ed/Engl</td>
<td>BA Linguistics, U of California/Berkeley, CA</td>
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<td>Instr/Phys Ed</td>
<td>BA Business Administration, U Hawaii Manoa, HI</td>
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<td>Haberman, Peter R.</td>
<td>Instr/Math</td>
<td>MA Mathematics, U of Montana, MT</td>
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<td>Hagen, Mark A.</td>
<td>Instr/Ind Draft/Illus</td>
<td>BA English, Iowa State U, IA</td>
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<td>Hall, David G.</td>
<td>Instr/Math</td>
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<td>Hall, Jennifer L.</td>
<td>Instr/ESOL</td>
<td>MAT English as a Second Language, Sch Intriml Training, VT</td>
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<td>Halloran, Paul L.</td>
<td>Spec/Sr Comm Resource</td>
<td>AB Sociology, Regis U, CO</td>
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<td>Hamreus, Christopher</td>
<td>Spec/Student Res</td>
<td>BA Social Science, Washington State U, WA</td>
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<td>Hanken, Kari L.</td>
<td>Counselor</td>
<td>BA Elementary Education, U N Iowa, IA</td>
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<td>Hanna, Evelyn D.</td>
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<td>Hardy, DeAnne</td>
<td>Spec/Coop Ed/Stnd Employment</td>
<td>BA Interdisciplinary Studies, Marylhurst U, OR</td>
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<td>Instr/Ophal Med Tech</td>
<td>BS Health Care Administration, Concordia U, OR</td>
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<td>Harrison, James S.</td>
<td>Instr/Hist</td>
<td>AB History, CUNY Hunter C, NY</td>
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<td>MA Pastoral Ministry, U of Portland, OR</td>
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<td>Instr/Chemistry</td>
<td>BS Chemistry, Ohio State U Main Camp, OH</td>
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<td>PHD Chemistry, Colorado State U, CO</td>
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<td>Coord/Theater</td>
<td>BS Secondary Education, U of Portland, OR</td>
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<td>MFA Drama, U of Portland, OR</td>
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<td>Heider, Erika S.</td>
<td>Div Dean</td>
<td>BS Business Administration, Syracuse U Main Camp, NY</td>
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<td>BA General Studies, Portland State U, OR</td>
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<td>MA Humanities, SUNY C Buffalo, NY</td>
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<td>Heiney, Karen E.</td>
<td>Spec/Learning Skills</td>
<td>BS Psychology, U of Oregon, OR</td>
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<td>MED Counseling &amp; Guidance, U of Idaho, ID</td>
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<td>Hess, Philip W.</td>
<td>Coord/Fin Aid</td>
<td>BA Counseling Education, Columbia Christian C, OR</td>
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<td>MS School Psychology, Lewis &amp; Clark College, OR</td>
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<td>Hester, Bonnie J.</td>
<td>Grants Officer</td>
<td>BS Education, U Tulsa, OK</td>
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<td>MED Education, U of Washington, WA</td>
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<td>Heuer, Michael J.</td>
<td>Mgr/TSS Customer Suppt</td>
<td>BA Information Systems, DePaul U, IL</td>
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<td>MPAF Public Affairs, Washington State U, WA</td>
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<td>Instr/ABE/GED</td>
<td>BA Education, San Diego State U, CA</td>
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<td>Hickok, Damon A.</td>
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<td>Hicks, Todd W.</td>
<td>Instr/PE</td>
<td>MSS Coaching, United States Sports Academy</td>
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<td>Hill, James G.</td>
<td>Spec/Club Affairs</td>
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<td>Hill, Roxanne W.</td>
<td>Instr/ESOL</td>
<td>BA Linguistics, U of Minnesota, MN</td>
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<td>MA Teaching ESL, U of Minnesota, MN</td>
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<td>Hinkle, Spencer W.</td>
<td>Instr/Blldg Trades</td>
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</table>
Portland Community College 2012-2013

Faculty & Staff

AAS Building Construction Techno, Portland CC, OR
BA Geography, U South Florida, FL

ACERT1 Building Construction Techno, Portland CC, OR

Ho, Katy W.
Div Dean
BS Public Relations, U of Oregon, OR
MED College Student Servcs Admin, Oregon State U, OR

Ho, Ty T.
Advisor/Fin Aid

Hollamon, Pattie J.
Human Resource Rep
BA Organizational Communication, Marylhurst U, OR
MA Organization & Management, City U of Seattle, WA

Holloway, Kathleen L.
Coord/Sr Vol Lit Tutor Prg
BA Psychology, Pacific Lutheran U, WA
BA Religion, Pacific Lutheran U, WA
MAT Teaching ESL, Sch Intrnatl Training, VT

Holmberg, Lawrence A.
Mgr/Information Tech
BA Philosophy, Haverford C, PA

Holt, Michael E.
Advisor/Fin Aid
BS Business Administration, Oregon State U, OR

Hooke, Wayne D.
Instr/Psych
AB Philosophy, U Georgia, GA
MA Education, U Georgia, GA

Hopf, Samantha N.
Mgr/Systems Dev
MBA Business Administration, Eastern Washington U, WA

Hopf, Steven J.
Division Mgr/Finance
BA Interdisciplinary Studies, Eastern Washington U, WA
MPA Public Admin, Portland State U, OR

Horani, Laura A.
Div Dean
BA Speech Communication, Portland State U, OR
CERT Tesol, Portland State U, OR
MA Tesol, Portland State U, OR

Horner, Shane M.
Instr/Math
MS Mathematics, U of Washington, WA

Hornshuh, Mark W.
Spec/EMS Prog
BA Business Administration, Portland State U, OR

Huff, Eric Scott
Dean/Instruction
BS Civil Engineering, U Maine, ME
MS Civil Engineering, Oregon State U, OR

Hughes, Christopher M.
Instr/Math
MS Mathematics, U of Reading, U K
PHD Mathematics, U of Reading, U K

Hull, Bryan G.
Instr/Comp & Lit
BA English, Boston U, MA
MA English, U of California/Irvine, CA

Hull, Janeen R.
Instr/Phys Ed
BED Sport Fitness, U Alabama, AL
MSK Applied Sport Science, Indiana UCntl Off, IN

Huminski, Thomas M.
Instr/Comp & Lit
BA Communication, U Michigan Ann Arbor, MI
MA English, Portland State U, OR

Hunt, Teri L.
Mgr/Payroll

Hunter-Bernstein, Gabriel J.
Mgr/Arts & Programs Program
BS Elementary Education, Boston U, MA
MA Education, California State U- Dmnngz Hills, CA

Hutson, Melinda L.
Instr/Geology

Hutt, Nancy L.
Instr/Nursing
MS Nursing, U Colorado U Sc Ctr, CO

Ingeleviciute, Ernesta
Spec/Employment/Bill5%
BA Psychology, Vilnius U, Lithuania
MA Psychology, Vilnius U, Lithuania

Ivan, Ljiga
Accountant I

Ivelisse, Brenda
Associate Dean/Student Develop
BA English, Washington State U, WA
MA Higher Ed Administration, Washington State U, WA

Iversen, Susan M.
Instr/Dev Ed Read &Writ
MA English, Oregon State U, OR
MA Home Economics, Oregon State U, OR
MA Curriculum & Instruction, Portland State U, OR

Iyer, Gayathridevi S.
Instr/Comp Sci
MS Electrical Engineering, Kansas State U, KS

Jacobsen, David W.
Instr/Dev Ed Read &Eng
BA General Literature, U of Oregon, OR
MA English, U of Oregon, OR

Jaecle, Jeff A.
Instr/Comp & Lit
BA English, U of Texas – San Antonio, TX
MA English, U of Texas – San Antonio, TX
PHD English, U of Texas Austin, TX

Jannsen, Marcia A.
Spec/Employment
BA Interdisciplinary Studies, Marylhurst U, OR
MED Instructional Technology, Amer Intercontinental U, GA

Jantze, Diane M.
Spec/Employment
BS Nutrition, Oregon State U, OR

Jarcho, Debra L.
Mgr/Bond Technology Project

Jeffery, James D.
Instr/Auto Body Rep
AAAS Auto Collision Repair, Portland CC, OR

Jensen, Deborah M.
Coord/Education

Jensen, John C.
Instr/Comp & Lit
BA English, U of California/Davis, CA
MA Journalism & Public Affairs, American U
MDIV Divinity, Princeton Theol Sem, NJ

Jernigan, Eric
Mgr/Information Security
MS Information Assurance, Norwich U Main Camp, VT

Jesse, Troy W.
Instr/Biology
BS Ecology, Ethology & Evolution,
U of IL @Urbana-Champaign, IL
MS Biology, U of IL @Urbana-Champaign IL
PHD Food Science, U of IL @Urbana-Champaign, IL

Johnson, Jessica E.
Instr/DE Reading & Writing
BA English, U of Washington, WA
BS Molecular & Cellular Biology, U of Washington, WA
MFA Creative Writing, U of Washington, WA

Johnson, Julianne R.
Instr/Music

Jones, Allen R.
Instr/Prof Music
AAS Vocational Music, Portland CC, OR
BA Human Resource Management, George Fox U, OR

Jones, Clifford D.
Instr/Comp Sci
MSBA General Business, U of Oregon, OR
CERT Computer Model & Sim Cert, Portland State U, OR
MS Systems Science, Portland State U, OR

Jones, Dianne L.
Spec/Employment

Jones, Karen J.
Director/Program
BS Housing Design, Oregon State U, OR
MED Adult Education, Oregon State U, OR

Jones, Linda

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Instr/Early Educ & Fam Studies
BA History, Loyola Marymount U, CA
MS Curriculum & Instruction, Portland State U, OR

Jones, Russell S.
Instr/Auto Serv Tech

Jordan, Alexander S.
Instr/Math
MA Mathematics, U of Oregon, OR
PHD Mathematics, U of Oregon, OR

Jordan, Micah F.
Instr/Biology
BS Biology, U of Oregon, OR
MS Biology, U of Oregon, OR

Jorgensen, Virginia A.
Instr/Dental Asst
AAS Prof/Tech Teacher Train, Portland CC, OR

Josifek, Jeffrey S.
Instr/Med Lab Tech
AAS Medical Lab Technology, Portland CC, OR
BS Science, Portland State U, OR
MS Ed Policy, Foundation & Admin, Portland State U, OR

Joy, Juanita M.
Instr/Nursing
MS Nursing, U of CA/San Francisco, CA

Juarez, Manuela N.
Spec/Comm Resource

Judge-Morris, Maureen A.
Mgr/Employment Srvcs
AB Sociology, U of Illinois @Chicago, IL

Judy, Robert S.
Instr/Welding
AAS Welding Technology, Portland CC, OR
AAS Auto Collision Repair Techno, Portland CC, OR
CERT Auto Body Painting, Portland CC, OR

Kadoun, Linda L.
Spec/Employment

Kalafatis, Mary D.
Dir/Managing PCC Foundation
BA Telecommunications, Michigan State U, MI
BA International Relations, Michigan State U, MI
BA Social Science, Michigan State U, MI
MBA Business Administration, Arizona State Univ. Main, AZ

Kaminski, Gregory W.
Instr/Comp Facilitator
BA Biology, Central Washington U, WA
MAT English, U of Washington, WA

Kao-Young, Cara L.
Instr/Dental Hyg
AAS Dental Hygiene, Portland CC, OR
BS Dental Hygiene, Eastern Washington U, WA

Kaplan, Joyce B.
Instr/BMZA
BS Biological Sciences, Cornell U, NY
MS Zoology, U of Idaho, ID

Katz, Jessica G.
Spec/Sr Comm Resource
MS Social Work, Columbia U, City of N Y, NY

Kaufka, Beth A.
Instr/Dev Ed/Engl
BA English, Portland State U, OR
MA Conflict Resolution, Portland State U, OR
MFA Creative Writing, Bowling Green State U Main, OH

Kaufman, Barbara A.
Instr/Comp App/Office Syst
BS Education, Southern Oregon U, OR
MST Business Education, Portland State U, OR

Kelley, Mary S.
Spec/Student Res
MED Counseling & Guidance, U of Arizona, AZ

Kelsay, Lynda D.
Instr/EMT
AS Pre-RN, S Plains C, TX

Kennedy, Carly
Counselor
BS Psychology, U of Oregon, OR
MS Counselling, Oregon State U, OR

Kennedy, Tammy I.
Occu Cluster Trainer

Kercher, David C.
Instr/Aviation Maint Tech

Kerr, Gregory
Instr/Comp App/Office Syst
BS History, Northern Arizona U, AZ
MS Writing, Portland State U, OR

Kessinger, Pamela C.
Ref Librarian
AA General Studies, Highline CC, WA
BA English, U of Washington, WA
MLS Library Science, U of Washington, WA

Khodaparast, Youssef
Instr/Econ
MA Economics, New Sch Soc Research, NY
PHD Urban Studies, Portland State U, OR

Khon, Dana L.
Spec/Student Res
BS Liberal Studies, Oregon State U, OR

Kiaunis, Katherine M.
Mgr/Assoc Bond Finance
BA Economics, Hope C, MI
MA Economics, U of Michigan, MI

Kidney, Daniel J.
Instr/Auto Serv Tech
BA History, Portland State U, OR

Kidoguchi, Ivan T.
Instr/Comp & Lit
BA English, U of Washington, WA
MA English, U of Washington, WA

Kidoguchi, Kenneth Y.
Instr/Math
BS Physics, U Hawaii Manoa, HI
MS Physics, U of Washington, WA

Kies, Michael
Instr/Civil Eng
BS Civil Engineer, Oregon State U, OR

Kilgore, Jack M.
Mgr/Assoc Facilities Maint

Killingsworth, Cynthia
Instr/Bus Admin
BA Accounting, U of Puget Sound, WA
MS Accounting, The U Of Maryland Sys, MD

Kim, Jin W.
Instr/Medical Assisting
AA General Studies, Portland CC, OR

Kimball, Cynthia A.
Instr/Comp & Lit
MA English, SUNY Buffalo Main Camp, NY
PHD English, SUNY Buffalo Main Camp, NY

Kilmer, Elizabeth S.
Counselor
BA Psychology, U Nebraska Lincoln, NE
MA Clinical Psychology, Minnesota State U, Mankato, MN

Kinder Doyle, Sarah K.
Mgr/Workforce Dev
BA International Studies, U of Oregon, OR

King, Gregory J.
Spec/Student Resource
BA English, W Illinois U, IL
MS Student Personnel in Higher Ed, Colorado State U, CO

King, Holly W.
Instr/Speech
BA Speech Communication, San Francisco State U, CA
MA Speech Communication, San Francisco State U, CA

King, Marta L.
Instr/Nursing
BSN Nursing, U Missouri Kansas City, MO
MN Nursing, U Missouri Kansas City, MO

Kinney, Julie B.
Mgr/HR Systems Dev
BS Management/Communication, Concordia U, OR
<table>
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<tr>
<th>Name</th>
<th>Degree(s)</th>
<th>Institution(s)</th>
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<tr>
<td>Kirchner, Eric J.</td>
<td>B.S. Physics, Rensselaer Poly Inst, NY</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td></td>
<td>B.S. Material Science Engineering, Rensselaer Poly Inst, NY</td>
<td>Portland Community College</td>
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<td>M.S. Material Science Engineering, Rensselaer Poly Inst, NY</td>
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<td>Kissick, Jerry R.</td>
<td>B.A. Mathematics, U.C.L.A. Los Angeles, CA</td>
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<td>M.S. Mathematics, U. Wisconsin Madison, WI</td>
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<td>Kittenger, Kimberly L.</td>
<td>Instr/Auto Serv Tech, AAS Automotive Service Techno, Portland CC, OR</td>
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<td>Kling, Kandace A.</td>
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<td>Knight, Christopher J.</td>
<td>Instr/Art, MFA Art, U. Wisconsin Madison, WI</td>
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<td>Knight, Elizabeth L.</td>
<td>Instr/Comp &amp; Lit, MFA English, U. Massachusetts Amherst, MA</td>
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<td>Knox, George D.</td>
<td>M.A. English, Portland State U, OR</td>
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<td>Kolins, Craig</td>
<td>Campus President/Extend Learn, BA. Journalism, N. Illinois U, IL</td>
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<td>M.S. Counseling, N. Illinois U, IL</td>
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<td>Ph.D. Higher Education, U. Toledo, OH</td>
<td>Portland Community College</td>
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<td>Kono, Kim M.</td>
<td>Dir/Development PCC Foundation, BA. Political Science, U. California/Davis, CA</td>
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<td>M.P.A. Public Administration, Lewis &amp; Clark College, OR</td>
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<td>Kopet, Julie G.</td>
<td>Dean/Instruction/Study Dev, BA. Social Work, Eastern Washington U, WA</td>
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<td>Kouzes, Ross T.</td>
<td>Instr/Math, BA. Mathematics, U. of CA/Santa Cruz, CA</td>
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<td>Kraft, Patrick J.</td>
<td>Instr/ITG Tech, CERT Machine Technology, Perry Technical Institute, WA</td>
<td>Portland Community College</td>
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<td>AAS Machine Manufacturing Tech, Portland CC, OR</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>Krauter, Erin D.</td>
<td>Instr/Med Lab Tech, BS Medical Technology, Oregon Health Science U, OR</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>Kristen, Jamee</td>
<td>Instr/Sociology, BA Psychology, U. Nebraska Lincoln, NE</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>MA Sociology, Washington State U, WA</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>PHD Sociology, U. Nebraska Lincoln, NE</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>Krohn, Brad E.</td>
<td>Instr/Vet Tech, BS Biology, U. of IL @ Urbana-Champaign, IL</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<tr>
<td>Kroeger, Rachel S.</td>
<td>Spec/Int’l Ed Program, BS Psychology, Portland State U, OR</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<tr>
<td>Krug, Kathy A.</td>
<td>Spec/Employment, BS Psychology, Portland State U, OR</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<tr>
<td>Kruger, Daniel A.</td>
<td>Instr/EET, MS Electrical Engineering, George Washington U, DC</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>Kuhn, Lauren L.</td>
<td>Instr/Social Science, BA. Anthropology, U. of CA-San Diego (UCSD), CA</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>MS Social Work, San Diego State U, CA</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>LaFrance, Jeannie E.</td>
<td>Spec/Student Resource, BA. Liberal Arts, U. of California-Santa Barb, CA</td>
<td>Portland Community College</td>
<td>Faculty, 2012-2013</td>
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<td>BA. English, Lewis &amp; Clark College, OR</td>
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<td>Laakso, Marta A.</td>
<td>Spec/CoopEd/StdntEmploy, BA Communications, Lewis &amp; Clark College, OR</td>
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<td>Lachenmeier, Erika N.</td>
<td>Spec/ESOL, BA Psychology, Pitzer College, CA</td>
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<td>Laff, Jeff R.</td>
<td>Mgr/Alt Prog&amp;Compliance, BA. English, Lewis &amp; Clark College, OR</td>
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<td>Lang, Heather J.</td>
<td>Dean/Student Dev, BA Hispanic Studies, Lewis &amp; Clark College, OR</td>
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<td>Langstraat, James L.</td>
<td>Spec/Interp Tmg, MED Special Ed: Hearing Impaired, Lewis &amp; Clark C, OR</td>
<td>Portland Community College</td>
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<td>Leavitt, Alissa G.</td>
<td>Instr/Pers Health, BA Health Studies: Community, Portland State U, OR</td>
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<td>MPH Health Admin &amp; Policy, Portland State U, OR</td>
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<td>Leavitt, Scot M.</td>
<td>Instr/Math, MS Mathematics, U. of Oregon, OR</td>
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<tr>
<td>Lee, Hal</td>
<td>Counselor/Rehab Guid, BA Arts &amp; Letters, Portland State U, OR</td>
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<td>BA Music, Marylhurst U, OR</td>
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<td>MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
<td>Portland Community College</td>
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309 PORTLAND COMMUNITY COLLEGE  ■  2012-2013
Lee, Lorie  
Spec/Acad Advising

Lee, Mathilda T.  
Spec/Student Res/Bilingual  
BA Psychology, U of Washington, WA  
MSW Social Work, U of Washington, WA

Lee, Yen N.  
Accountant III  
BS Finance, Portland State U, OR  
BS Accounting, Portland State U, OR

Leonard-Floyd, Katie E.  
Instr/Aviation Sci  
BS Mathematics, Portland State U, OR  
MS Mathematics, Portland State U, OR  
MS Education, Portland State U, OR

Levine, Jennifer J.  
Spec/Learning Skills  
MS Ed Policy, Foundation & Admin, Portland State U, OR

Li, Xiaobin  
Systems Analyst  
BS Computer Science, Western Oregon U, OR  
MED Information Tech, Western Oregon U, OR

Liang, Li  
Instr/Comp Sci/CIS  
MS Computer Science, Portland State U, OR

Lien, Kevin J.  
Instr/Biology  
BS Biology, Stanford U, CA  
MS Biology, Portland State U, OR

Lighthart, Alyson L.  
Div Dean  
BS Geology, Dickinson C, PA  
PHD Geology, Tulane U, LA

Lincoln, Eddie R.  
Spec/Employment  
BBA Marketing, U of Portland, OR

Lindahl, Eva J.  
Instr/Med Terminology  
CERT Ophthalmic Medical Tech, U of Minnesota, MN

Lindberg, Morgan M.  
Instr/Japanese  
BA English, U of Montana, MT  
BA Japanese, U of Montana, MT  
MA East Asian Lang & Lit-Japanese, U Hawaii Manoa, HI

Lindsey, Edward D.  
Instr/Fire Protection Tech  
BS Speech Communication, Portland State U, OR  
AAS Fire Protection Technology, Portland CC, OR  
MPA Public Admin, Portland State U, OR

Linn, Barbara H.  
Mgr/Bond Facilities Project

Lippert, David E.  
Coord/Digital Services  
BS English, Willamette U, OR

Littrell, Tanya R.  
Instr/Phys Ed  
BS Physical Education, U of Oregon, OR  
MS Human Performance, Oregon State U, OR  
PHD Exercise & Sport Science, Oregon State U, OR

Liu, Diana F.  
Accountant II

Lively, Ronda J.  
Instr/Math  
BS Mathematics, Montana State U/Bozeman, MT  
MS Mathematics, Montana State U/Bozeman, MT

Loanzon, Maria Esther V.  
Instr/ABE/GED  
BA Child Development, Maryknoll College, Philippines  
MA Psychology, Ateneo de Manila, Philippines

Loanzon, Priscilla V.  
Instr/Nursing  
MA Teaching Of Nursing, Columbia U Teachers C, NY  
MED Curriculum & Instruct, Columbia U Teachers C, NY  
EDD Health Education, Columbia U Teachers C, NY

Loopeker, Sarah M.  
Coop/Fin Aid  
BA Liberal Studies, U of Montana, MT

Logan, Bert R.  
Dir/Fin Aid & Veteran Servs

Londraville, Craig E.  
Mgr/Campus Tech Serv

Longueil, Kevin M.  
Instr/Welding  
BFA Sculpture, Pacific NW College of Art, OR

Loomis, Dawn L.  
Spec/Admissions  
BS Sociology, Illinois State U, IL

Louie, Tammy  
Instr/Math  
BS Mathematics, U of Oregon, OR  
MST Mathematics, Portland State U, OR

Love, Theresa M.  
Instr/Dev Ed  
MFA Drama, U of California/Davis, CA  
MA English, U of California/Davis, CA

Lowgren, Andrea  
Instr/Hisit  
BA History, Linfield College, OR  
BA Music, Linfield College, OR  
MA Music History, U of Oregon, OR  
MA History, U of CA/Santa Cruz, CA  
PHD History, U of CA/Santa Cruz, CA

Lowrey, Scott W.  
Instr/GED  
BS Electrical Engineering, U of Southern California, CA  
MS Electrical Engineering, U of Southern California, CA

Luff, Michelle D.  
Spec/Acad Advising  
BA English, Whitman College, WA

Maazouz, Patricia L.  
Instr/Chem  
BS Chemistry, U of Saint Mary, KS  
BS Mathematics, U of Saint Mary, KS  
PHD Chemistry, U Notre Dame, IN

Macaulay, Leslie A.  
Instr/Auto Serv Tech

Macleise, James D.  
Mgr/Workforce Dev Oper

Madrigal, Gerardo L.  
Spec/Employment/6/5%

Maginn, Dana J.  
Spec/Learning Skills  
BA English, U of Oregon, OR

Magnuson, Joel C.  
Instr/Econ  
BS Economics, Portland State U, OR

Magruder, Richard C.  
Supv/PE Facil/Sports Athletics  
AAS General Studies, Edmonds CC, WA  
BS Physical Education, Lewis-Clark State College, ID  
MED Educational Administration, U of Idaho, ID

Mahon-Decker, Marie T.  
International Stdnt Advisor  
BA Social Work, U of Montana, MT

Mainville, Stephen J.  
Instr/Comp & Lit  
BA English, SUNY C Oswego, NY  
MA English, SUNY C Oswego, NY  
PHD English, U of Oklahoma, OK

Majidi, Abdelmajid  
Mgr/Workforce Dev  
BBA International Business, Washington State U, WA

Maldonado, Tanya  
Spec/CoopEd/StdntEmploy  
BA Education Counseling, San Jose State U, CA  
MA College Student Personnel, San Jose State U, CA

Malone, Gregory S.  
Mgr/Techn Services  
BS Business Administration, Eastern Oregon U, OR  
MBA Business Administration, Oregon State U, OR

Manchester, Kimberly A.  
Instr/Vis Arts  
BA Studio Arts, Mills College, CA  
MFA Visual Arts, U of CA-San Diego (UCSD), CA
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<tr>
<th>Name</th>
<th>Position</th>
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<td>Mann, Susan P.</td>
<td>Instr/Speech</td>
<td>BA Journalism, Oregon State U, OR, MS Management/Communication, U of Portland, OR</td>
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<tr>
<td>Manolas, Melissa</td>
<td>Instr/Comp &amp; Lit</td>
<td>MA Comparative Literature, Louisiana State U Sys</td>
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<td>Marchetta, Jonathan W.</td>
<td>Mgr/Facilities Suppt Srvs</td>
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<td>Marciniak, Michael</td>
<td>Instr/Math</td>
<td>MS Statistical Science, George Mason U, VA, MST Teaching, Virginia Commonwealth U, VA</td>
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<tr>
<td>Marden, Beverly M.</td>
<td>Instr/Math</td>
<td>BS Mathematics, Birmingham-Southern College, AL, MS Mathematics, U of Alabama/Birmingham, AL</td>
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<tr>
<td>Marks, Kelly L.</td>
<td>Coord/Rural Communities</td>
<td>BS Psychology, Portland State U, OR, MS Ed Policy/Foundation &amp; Admin, Portland State U, OR</td>
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<tr>
<td>Maros, Alexandra</td>
<td>Instr/Bus Admin</td>
<td>BA Art History, U California Sys Adm, CA, MBA Business Administration, Georgetown U, DC</td>
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<td>Marquez-Oldham, Tammy E.</td>
<td>Dir/SBTP &amp; Small Bus Dev</td>
<td>BS Human Dev &amp; Family Studies, Warner Pacific C, OR, MBA Business Administration, George Fox U, OR</td>
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<td>Marsh, Frances</td>
<td>PAC Rental/Tech Coord</td>
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<td>Marshall, Bonnie L.</td>
<td>Instr/Dental Asst</td>
<td>ACERT1 Dental Assistant, Portland CC, OR, AAS Vocational Teacher Education, Portland CC, OR</td>
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<tr>
<td>Martin, Amber N.</td>
<td>Instr/Nursing</td>
<td>BSN Nursing, Linfield College, MN Family Nurse Practitioner, Washington State U, WA</td>
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<td>Martin, Anne-Marie</td>
<td>Instr/World Lang/Spanish</td>
<td>MA Romance Languages, U of Washington, WA</td>
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<td>Martin, Kristen J.</td>
<td>Coord/Women's Resource</td>
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<td>Martinez Zapata, Eduardo</td>
<td>Dir/Study Suppt Ser Prog</td>
<td>BS Business Administration, Oregon State U, OR</td>
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<td>Martinez, David</td>
<td>Coord/Study Outreach Orient</td>
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<td>Martinez-Alicea, Rut</td>
<td>Spec/Rape Prevent Ed</td>
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<td>Martinez-Gallagher, Monica M.</td>
<td>Online Development Facilitator</td>
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<td>Massey, Laura A.</td>
<td>Dir/Instl Effectiveness</td>
<td>BBA General Business, Univ. of North Texas, TX, MBA Management Science, Univ. of North Texas, TX</td>
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<td>Mathern, Rebecca A.</td>
<td>Dir/Political Science, U of Minnesota, MN</td>
<td>MA Liberal Studies, U of Minnesota, MN</td>
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<td>May-Varas, Samuel A.</td>
<td>Coord/Curriculum</td>
<td>BA Economics, U South Florida, FL, MAT Teaching, City U of Seattle, WA</td>
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<td>Maynard, Monica R.</td>
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<td>McCray, Laura N.</td>
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<td>Instr/Health</td>
<td>BS Biology, SUNY Col at Geneseo, NY, MPH Health Promotion, Portland State U, OR</td>
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<td>Memmott, Tracie D.</td>
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<td>McQueen, Ann E.</td>
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<td>McEwen, Randall J.</td>
<td>District Vice President</td>
<td>BS Electrical Engineering, Stanford U, CA, MS Electrical Engineering, Stanford U, CA</td>
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<td>McEvans, Ruth</td>
<td>Counselor</td>
<td>BA Social &amp; Behavior Studies, U South Florida, FL, MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
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<td>McMullen, Rachel E.</td>
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<td>Instr/Welding</td>
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<td>Instr/Math</td>
<td>MS Mathematics, Northern Arizona U, AZ</td>
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<td>Meserschmidt, Sheila</td>
<td>Dir/Inst Health Care</td>
<td>BS Education, U N Iowa, IA</td>
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<td>Meserschmidt, Sheila</td>
<td>Dir/Inst Health Care</td>
<td>MBA Business Administration, U Iowa, IA</td>
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<td>Messersmith- Glavin, Lara L.</td>
<td>Instr/Dev Ed/Eng</td>
<td>BA Filmmaking, Bard C, NY</td>
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<td>Messersmith- Glavin, Lara L.</td>
<td>Instr/Dev Ed/Eng</td>
<td>MA Teaching English to Others, Portland State U, OR</td>
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<td>Metcalf, Elizabeth A.</td>
<td>Instr/Arch Drafting</td>
<td>BARC Architecture, Washington State U, WA</td>
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<td>Metcalf, Elizabeth A.</td>
<td>Instr/Arch Drafting</td>
<td>MA Architecture, U of Idaho, ID</td>
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<td>Meyer, Gregg</td>
<td>Instr/ENGR/CMET</td>
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<td>Instr/Pers Health</td>
<td>BS Health Education, U of Oregon, OR</td>
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<td>Instr/Pers Health</td>
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<td>Michelson, Brooke M.</td>
<td>Spec/Student Res</td>
<td>BA Psychology, Humboldt State U, CA</td>
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<td>Mgr/Student Retention &amp; Suppt</td>
<td>BA Russian, U of Oregon, OR</td>
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<td>Mikhailov, Slava</td>
<td>Mgr/Student Retention &amp; Suppt</td>
<td>MED Educational Leadership, Concordia U, OR</td>
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<td>Millard, Dominique R.</td>
<td>Instr/ESOL</td>
<td>BA French, U of Minnesota, MN</td>
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<td>Millard, Dominique R.</td>
<td>Instr/ESOL</td>
<td>MA English as a Second Language, U of Arizona, AZ</td>
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<td>Miller, Fred C.</td>
<td>Instr/Psych</td>
<td>BS Psychology, Pacific U, OR</td>
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<td>MS Education, Portland State U, OR</td>
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<td>Miller, Fred C.</td>
<td>Instr/Psych</td>
<td>MS Psychology, Portland State U, OR</td>
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<td>Miller, Hadiyah K.</td>
<td>Instr/Early Educ &amp; Fam Studies</td>
<td>MA Human Development, Pacific Oaks College, CA</td>
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<td>Miller, Jack J.</td>
<td>Instr/Poli Sci</td>
<td>MA Political Science, U of Washington, WA</td>
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<td>Miller-Tatro, Pamela</td>
<td>Counselor</td>
<td>BS Psychology, Portland State U, OR</td>
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<td>Miller-Tatro, Pamela</td>
<td>Counselor</td>
<td>MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
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<td>Mills, Teri A.</td>
<td>Instr/Nursing</td>
<td>BS Nursing, Sonoma State U, CA</td>
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<td>Mills, Teri A.</td>
<td>Instr/Nursing</td>
<td>MS Nursing, U of Portland, OR</td>
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<td>Minkin, Leonid M.</td>
<td>Instr/Physics</td>
<td>BS Physics, Saratov State U</td>
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<td>Minkin, Leonid M.</td>
<td>Instr/Physics</td>
<td>MS Physics, Saratov State U</td>
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<td>Minor, Gratia E.</td>
<td>Spec/Learning Skills</td>
<td>BA Spanish, Whitworth U, WA</td>
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<td>Mintz, Mario</td>
<td>Mgr/Tech Solutions Services</td>
<td>MS Computer Information Systems, U of Phoenix, AZ</td>
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<td>Miranda, Marcos K.</td>
<td>Spec/Employment</td>
<td>AA Humanities, Co C Morris, NJ</td>
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<td>Moaadab, Salomeh S.</td>
<td>Instr/Comp Lit</td>
<td>MA English, Portland State U, OR</td>
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<td>Monahan, Linda S.</td>
<td>Human Resource Rep</td>
<td>BS Psychology, Southern Oregon U, OR</td>
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<td>Monahan, Linda S.</td>
<td>Human Resource Rep</td>
<td>MPA Public Admin, Portland State U, OR</td>
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<td>Moore, Diane E.</td>
<td>Instr/CAS</td>
<td>BS Business Administration, Portland State U, OR</td>
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<td>Moore, Diane E.</td>
<td>Instr/CAS</td>
<td>MST Business Education, Portland State U, OR</td>
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<td>Moore, J Kenneth</td>
<td>Instr/Crim Justice</td>
<td>BS Education, U of Texas El Paso, TX</td>
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<td>Moore, J Kenneth</td>
<td>Instr/Crim Justice</td>
<td>MED Education, U of Texas El Paso, TX</td>
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<td>Morales, Walter T.</td>
<td>Instr/Comp Sci</td>
<td>BA Computer Science, Western Oregon U, OR</td>
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<td>Instr/Comp Sci</td>
<td>MS Interdisciplinary Studies, Western Oregon U, OR</td>
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<td>Morfin, Jessica M.</td>
<td>Spec/Degree Audit and Transfer</td>
<td>BS Psychology, Oregon State U, OR</td>
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<td>Morgan, Clifford J.</td>
<td>Spec/Admissions</td>
<td>BS Communication, Montana State U/Bozeman, MT</td>
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<td>Morgan, Karen A.</td>
<td>Instr/PE</td>
<td>MS Sports Medicine, E Michigan U, MI</td>
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<td>Morgan, Karen A.</td>
<td>Instr/PE</td>
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<td>BS Recreation, Tourism, Mgmt, Des, U of Oregon, OR&lt;br&gt;MED Curric &amp; Teacher Leader, Miami U Oxford Camp, OH</td>
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<td>AS Schenectady Co CC, NY, BS Music Education, C St Rose, NY, MS Educational Psychology, C St Rose, NY, PHD Educational Psychology, SUNY Albany, NY</td>
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Samson, Shelly  
Spec/Acad Advising  
AAS Accounting, Hood C, MD  
BS Business Administration, Eastern Oregon U, OR

Sanders, Karen M.  
Div Dean  
MAT Adult Education, Alaska Pacific U, AK

Sanders, Tammy R.  
Accountant II  
BA Environmental Studies, Connecticut C, CT  
MS Marine Policy, U Delaware, DE  
CERT Accounting, Portland State U, OR

Sanders, Todd M.  
Instr/Mech Eng  
BS Civil Engineering, Michigan State U, MMSU Delaware, DE  
PHD Oceanography, U Delaware, DE

Sandlin, Julianne P.  
Instr/Art Hist  
BS Housing Studies, Appalachian State U, NC  
MA Art History, U S Carolina Columbia, SC  
PHD Art History, Florida State U, FL

Sandrock, David R.  
Instr/Landscape  
BS Horticulture, U Georgia, GA  
BS Landscape Management, U Georgia, GA  
MS Horticulture, U Georgia, GA  
PHD Horticulture, Oregon State U, OR

Santmyer, James B.  
Instr/Comp Info Sys  
MS Computer Science, Portland State U, OR

Sauve, Lindsay T.  
Spec/Admissions  
AA Arts & Letters, Santa Rosa Junior College, CA

Savage, Nathan  
Instr/Graphical Design  
BFA Communication Design, Texas State U-San Marcos, TX

Schaerer, Brett L.  
Instr/Biology  
MS Entomology, Oregon State U, OR

Schilling, Nicole C.  
Advisor/Fin Aid  
Glendale CC, CA

Schleinkofer, Gary F.  
Spec/Instructional Comp

Schmidt, Suzanne  
Spec/Admissions  
BS Therapeutic Recreation, California State U-Northridge, CA  
MS Counseling, Oregon State U, OR

Schmitt, Loraine P.  
Dir/Distance Ed

Schmitt, Robert F.  
Mgr/Bond Media Infra

Schneider, Alisa L.  
Dir/Nursing  à  
MN Nursing Administration, George Mason U, VA

Schneider, Arthur  
Instr/Comp App/Office Syst  
BS Business Administration, California State U-Chico, CA  
BA Business Education, California State U-Chico, CA  
MS Counseling, California State U-East Bay, CA

Schneider, James P.  
Instr/Chem  
MS Materials Science & Engr, U Wisconsin Madison, WI  
MS Chemistry, U Wisconsin Madison, WI

Schneider-Anthony, Monica H.  
Instr/Psych  
BS Occupational Therapy, W Michigan U, MI  
MA Counseling, Ball State U, IN  
PSYD Industrial Psychology, US. International U, CA

Schottland, Henry  
TSS Manager  
MS Indus & Operations Engineer, U of Michigan, MI

Schramm, Sandra A.  
Dir/Occupational Programs  
BS Home Economics Education, Texas Tech U, TX  
MA Rehabilitation Counseling, California State U-Fresno, CA

Schoeder, Vicki  
Instr/Physics  
PHD Geophysics, U of Washington, WA

Schwartz, Kelly R.  
Human Resource Rep  
MBA Business Administration, U of Phoenix - Main, AZ

Scott, Cheryl L.  
Div Dean  
BS Sociology, U of Oregon, OR  
MBA Management, Augusta State U, GA  
PHD Education, Oregon State U, OR

Scott, Matthew J.  
Instr/Welding  
AAS Welding Technology, U Alaska Anchorage CC, AK  
BS Education, Northern Arizona U, AZ

Scott, Nancy E.  
Instr/Econ  
BS Economics, Southern Oregon U, OR  
MS Agricultural Economics, Oregon State U, OR

Scott, Victoria L.  
Ref Librarian  
BA Liberal Arts, The Evergreen State College. WA  
MA English, U of Washington, WA  
MLS Library Science, U of Washington, WA

Seaman, Peter  
Online Development Facilitator  
BS Government, US Coast Guard Acad, CT  
MS Instructional Systems Tech., Indiana U Bloomington, IN

Seder, Phillip A.  
Instr/Bus Admin  
BS Transportation & Logistics, U of Oregon, OR  
MBA Business, Columbia U, City of N Y, NY

Seely, Sara R.  
Ref Librarian

Seery, Nicole M.  
Spec/Club and Programs  
BA Social Science, Western Oregon U, OR

Selander, Judith A.  
Instr/Dev Ed/Engl  
BS Elementary Education, U of Minnesota, MN  
MS Counseling, California State U-Long Beach, CA

Semura, Patricia M.  
Instr/Speech  
BED Speech, U Hawaii Manoa, HI  
MA Speech, U Hawaii Manoa, HI

Sengdeng, Kristin D.  
Spec/Student Res  
BS Social Science, Boise State U, ID  
MS Ed Policy,Foundation & Admin, Portland State U, OR

Sessions, Hal R.  
Instr/Biology  
MD Medicine, U Tennessee Ctr Hlth Sci, TN

Severson, Mary J.  
Associate Dean/Student Develop  
BA German, Augustana C, SD  
BA Religion, Augustana C, SD  
MA Systematics, Luther Theol Sem, MN

Seymour, Christopher L.  
Spec/Acad Advising  
BA Fine Arts, Georgetown U, DC

Shapiro, Robin  
Ref Librarian  
AA Liberal Arts, St Petersburg College/JC, FL  
BA English, U South Florida, FL  
MLS Library Science, U N Carolina Chapel Hill, NC

Shaw, John C.  
Instr/Trades and Industry  
AGEN General Studies, Yakima Valley CC, WA  
BBA Management, American Intercontinental U, GA  
MED Instructional Techno, American Intercontinental U, GA

Shaw, John M.  
Instr/His  
BA History, Thomas Edison C, NJ  
MA American Indian Studies, U of Arizona, AZ  
PHD US History, U of Arizona, AZ

Sheiden, Wendy A.
Instr/Nursing
BS Nursing, E Michigan U, MI
MN Family Nurse Practitioner, Oregon Health Science U, OR

Shelley, Christopher W.
Instr/Hist
BS History, Portland State U, OR
MA History, Portland State U, OR

Sherer, Margaret
Instr/Nursing
BA Biology, Wittenberg U, OH
BSN Nursing, Northwestern U, IL
MS Nursing, Oregon Health Science U, OR

Shimada, Karen
Program Manager I
BS Educational Studies, U Wisconsin Milwaukee, WI
MPH Public Health, U Hawaii Manoa, HI

Shingledecker, Diane G.
Instr/Comp Appl/Office Syst
BA Psychology, Lafayette C, PA
MAT Education, Monmouth C, NJ

Shmakov, Kristine L.
Instr/World Lang/Russian
BA Russian, U of Oregon, OR

Shotwell, Hsiao-Yun
Instr/Chinese
MA Teaching English to Others, Portland State U, OR

Siebold, Stefanie
Mgr/Workforce Dev
BS Management, Bellevue College

Simonds, Kurt P.
Div Dean
AB English & American Literature, Harvard U, MA
MFA English, U Pittsburgh Main Camp, PA

Simonds, Stephen P.
Instr/Math
BS Education: Math, Michigan State U, MI
MS Mathematics, Portland State U, OR

Sin, Lap Man
Spec/Comm Resource
BS Business Administration, Portland State U, OR

Sipe, Deborah M.
Dir/Child Development Center
AB Political Science, U of California/Berkeley, CA
MA International Studies, U of Oregon, OR
MS Speech Communication, Portland State U, OR

Sitomer, Ann M.
Instr/Math
BA Liberal Arts, St Johns C Main Camp, MD
BA Mathematics, U of Southern Maine, ME
MA Mathematics, Arizona State Univ. Main, AZ

Sivak, Marie M.
Instr/Art
MFA Sculpture, Virginia Commonwealth U, VA

Smith, Barbara J.
Instr/Radiol Tech
BS Environmental Studies, Oregon State U, OR
MS Ed Policy,Foundation & Admin, Portland State U, OR

Smith, Daniel J.
Mgr/Library Circul

Smith, Douglas C.
Instr/Fire Protection Tech
AAA Automotive Technology, Oregon Inst of Tech, OR
BA Auto Mechanics Techno, Oregon Inst of Technology, OR
AAS Fire Protection Technology, Portland CC, OR

Smith, Elizabeth I.
Instr/Comp & Lit
BA English, North Park U, IL
MA Literature, U of CA/Santa Cruz, CA

Smith, Gary C.
Instr/Dental Tech
AA General Studies, El Camino College, CA
ACERT D2 Dental Technology, Orange Coast College, CA

Smith, Jodie K.
Supervisor/Bookstore

Smith, Kimmerley D.
Instr/Sociol
BA Sociology, Whitman College, WA
MA Sociology, Indiana U Bloomington, IN
PHD Sociology, Indiana U Bloomington, IN

Smith, Mark R.
Instr/VIS Arts
BS Art, Western Oregon U, OR
BFA Art, Cooper Union, NY
MFA Painting, Portland State U, OR

Smith, Ronald E.
Research Analyst
PHD Higher Education, S Illinois U Carbondale, IL

Smith, Steve J.
Dir/Curriculum Sup Office
BA International Studies, U of Washington, WA
MED Adult Education, Oregon State U, OR

Smith-Abbott, Mary A.
Instr/Skills Ctr
AB English, Anna Maria C Women, MA
MFA Public Admin, Suffolk U, MA

Snook, Geoffrey O.
Instr/Auto Body Rep
AS Auto Collision Repair Techno, Portland CC, OR

Sofronova-Allen, Larissa I.
Instr/Alt Prg/Bilingual
AM Foreign Language, Kuban State U, Russia
PHD Educational Psych, Highest Cert C/Soc.Repblc, RU

Somes, Virginia A.
Instr/Math
BA Mathematics, Mills College, CA
MS Env Systems (Math Mod), Humboldt State U, CA

Sonneleitner, Michael W.
Instr/Poli Sci
AB Political Science, Whitman College, WA
MA Political Science, U of Minnesota, MN
PHD Political Science, U of Minnesota, MN

Sonntag, Jennifer M.
Annual Fund/Alumni Officer

Sparks, John S.
Instr/ESOL
MA Tesol, Portland State U, OR

Spaziani, Marc d.
Instr/Phys Ed
BS Exercise & Sport Science, Oregon State U, OR
MS Exercise & Sport Science, Oregon State U, OR

Spillum, Laurel E.
Instr/Dev Ed
BS Elementary Education, Western Oregon U, OR
MED College Student Servcs Admin, Oregon State U, OR

Spoddeek, Heiko P.
Instr/Dev Ed
BS Physics, Technical U of Berlin, GER
MS Physics, Technical U of Berlin, GER

Springer, Rebecca J.
Coord/Stud Ldrshp
BA Sociology, Luther C, IA
MA Sociology, Northern Arizona U, AZ

Spycher, Tamara S.
Coord/Stud Ldrshp
BA Social Science, Portland State U, OR
MS Ed Policy,Foundation & Admin, Portland State U, OR

Stabley, Angelike P.
Instr/Math
BBA Marketing, U Florida, FL
MST Mathematics, Portland State U, OR

Standley, Wally
Instr/Auto Body Rep

Stanforth, Erin E.
Coord/Sustainable Practices
BA Interdisciplinary Studies, Appalachian State U, NC

Stark, Melissa J.
Spec/Admissions
BS Psychology, Eastern Oregon U, OR

Starkey, Bonnie K.
Coord/Bus Trng & Ed Dev
BS History, U Hawaii Honolulu CC, HI
MS Human Resources, U of Leicester, UK
<table>
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<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
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<td>Stauffer, Charles W.</td>
<td>Mgr/Bond Facilities Project</td>
<td>BA Interdisciplinary Studies, Marylhurst U, OR</td>
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<td>BS Management, Marylhurst U, OR</td>
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<td>Steele, Robert W.</td>
<td>Instr/Bldg Trades</td>
<td>BS Physical Education, CA State Polytechnic-U-Pomona, CA</td>
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<td>Steinmetz, Dieterich V.</td>
<td>Div Dean</td>
<td>BA Biology, Yale U, CT</td>
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<td>MD Medicine, Oregon Health Science U, OR</td>
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<td>Stephanson, Susan M.</td>
<td>Coord/Bus Tmg &amp; Ed Dev</td>
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<td>Stevens, Rachel A.</td>
<td>Instr/Comp &amp; Lit</td>
<td>MA English, U of Washington, WA</td>
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<td>Stevens, Sonya L.</td>
<td>Dir/Child Care Center</td>
<td>BS Child Development, U of Idaho, ID</td>
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<td>Stewart, Scott L.</td>
<td>Instr/Mach Tech</td>
<td>AAS Machine Manufacturing Techno, Portland CC, OR</td>
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<td>Stockton, Matthew S.</td>
<td>Instr/Philosophy</td>
<td>BS Anthropology, U of Oregon, OR</td>
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<td>MA Philosophy, U of Montana, MT</td>
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<td>MA Counseling Psych Marr/Fam, Lewis &amp; Clark C, OR</td>
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<td>Stone, Debbie E.</td>
<td>Coord/Women's Resource</td>
<td>MA Counseling Psychology, Pacifica Graduate Inst, CA</td>
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<td>Accountant II</td>
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<td>Div Dean</td>
<td>BA German Literature, U of Rochester, NY</td>
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<td>Stoutenburg, Nancy M.</td>
<td>Counselor</td>
<td>MA Applied Behavioral Science, Bastyr U, WA</td>
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<td>Supervisor/Bookstore</td>
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<td>Instr/Psych</td>
<td>BS Psychology, Portland State U, OR</td>
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<td>Sullivan, Joanna D.</td>
<td>Instr/ESOL</td>
<td>BA English, Swarthmore C, PA</td>
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<td>MA Comparative Literature, U Wisconsin Madison, WI</td>
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<td>MA African Languages &amp; Lit, U Wisconsin Madison, WI</td>
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<td>PHD African Languages &amp; Literature, U Wisconsin Madison, WI</td>
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<td>Mgr/Bond Facilities Project</td>
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<td>Swanson, Greta S.</td>
<td>Instr/Math</td>
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<td>Swint, Steven R.</td>
<td>Coord/Education Center</td>
<td>BA Communication Arts, Pembroke State U, NC</td>
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<td>MA Counseling, U N Carolina Charlotte, NC</td>
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<td>Talbot, Kay M.</td>
<td>Coord/Sr Vol Lit Tutor Prg</td>
<td>BA Mgmt Of Human Resources, George Fox U, OR</td>
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<td>MS Educational Policy &amp; Mgmt, Portland State U, OR</td>
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<td>Tangredi, Patrick J.</td>
<td>Instr/Theater Arts</td>
<td>BA English, Massachusetts College, MA</td>
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<td>MFA Theatre Arts, Tulane U, LA</td>
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<td>Taylor, Jody Y.</td>
<td>Instr/Food &amp; Nut</td>
<td>BS Nutrition, U of Idaho, ID</td>
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<td>MS Nutrition, U of Idaho, ID</td>
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<td>Terefe, Mulu A.</td>
<td>Spec/Employment/Bil5%</td>
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<td>Terry, David W.</td>
<td>Internal Auditor</td>
<td>BS Business Administration, Eastern Oregon, OR</td>
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<td>Thomas, Marilyn</td>
<td>Instr/Biology</td>
<td>MST Biology, Portland State U, OR</td>
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<td>Thompson, Penny S.</td>
<td>Coord/Resource Ctr</td>
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<td>Thornburgh, Cynthia C.</td>
<td>Instr/ESOL</td>
<td>BA Humanities, U of California/Irvine, CA</td>
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<td>MED Education: ESL, Azusa Pacific U, CA</td>
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<td>Thornton, Diane L.</td>
<td>Asst Coord/Women's Resource</td>
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<td>Thurber, Phillip</td>
<td>Instr/Math</td>
<td>MS Mathematics, U of Oregon, OR</td>
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<td>PHD Mathematics, U of Oregon, OR</td>
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<td>Thwing, Rachel S.</td>
<td>Instr/Biology</td>
<td>BS Biology, Vanderbilt U, TN</td>
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<td>MS Biology, Georgia State U, GA</td>
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<td>Tillery, Sarah</td>
<td>Coord/Service Learning</td>
<td>BA Women's Studies, U of California/Irvine, CA</td>
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<td>BA English, U of California/Irvine, CA</td>
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<td>MA Women's Studies, San Diego State U, CA</td>
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<td>PHD Women's Studies, U Maryland C Park, MD</td>
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<tr>
<td>Tobin, Nicole A.</td>
<td>Coord/Study Abroad</td>
<td>BA English, U Colorado Boulder, CO</td>
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<td>BA French, U Colorado Boulder, CO</td>
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<td>BA Fine Arts, U Colorado Boulder, CO</td>
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<td>MA Linguistics, Indiana U Bloomington, IN</td>
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<td>MA Comparative Literature, Indiana U Bloomington, IN</td>
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<tr>
<td>Tolva, Magdalena M.</td>
<td>International Stnt Advisor</td>
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<td>BA Psychology, Portland State U, OR</td>
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<td>Tompkins, Kristi J.</td>
<td>Instr/World Lang/German</td>
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<td>BA English, Portland State U, OR</td>
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<td>MA German, U of Oregon, OR</td>
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<tr>
<td>Torgeson, Sander</td>
<td>Instr/CAT Dealer Svc Tech Trg</td>
<td>AA Heavy Equipt, Truck &amp; Diesel, SUNY A&amp;T C Alfred, NY</td>
</tr>
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<td></td>
<td></td>
<td>AA Automotive Service Specialist, SUNY A&amp;T C Alfred, NY</td>
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<td>Torres-Cortez, Suleima</td>
<td>Spec/Employment/5% Bi</td>
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<td>BA Spanish, U of Oregon, OR</td>
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<td>BA Political Science, U of Oregon, OR</td>
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<td>Totten, Delyse E.</td>
<td>Instr/Bus Admin</td>
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<td>Tran, Christina V.</td>
<td>Instr/Vet Tech</td>
<td>BS Veterinary Medicine, U of IL @Urbana-Champaign, IL</td>
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<td>DVM Veterinary Medicine, U of IL @Urbana-Champaign, IL</td>
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<td>Tran, Van T.</td>
<td>Spec/Employment/Bil5%</td>
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<td>Treadway, Sara N.</td>
<td>Coord/Education</td>
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<td>BA Art, U of Puget Sound, WA</td>
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<td>BA Politics &amp; Government, U of Puget Sound, WA</td>
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<td>MBA Business Administration, Willamette U, OR</td>
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<td>Triplett, Jeff S.</td>
<td>Dean/Instruction</td>
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<td>BA Psychology, Oregon State U, OR</td>
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<td>MED Counseling &amp; Guidance, Oregon State U, OR</td>
</tr>
<tr>
<td>Name</td>
<td>Title/Job Description</td>
<td>Education/Training Details</td>
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<td>Truman, Glen F.</td>
<td>Instr/Ind Draft/Illus</td>
<td>BS Industrial Arts Education, Oregon State U, OR</td>
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<tr>
<td>Tsongas, Dawn P.</td>
<td>Counselor</td>
<td>BA Psychology, St Olaf C, MN &lt;br&gt;BA Home Economics, St Olaf C, MN &lt;br&gt;MS Educational Psychology, U Wisconsin Milwaukee, WI</td>
</tr>
<tr>
<td>Underwood, Jan M.</td>
<td>Instr/World Lang/Spanish</td>
<td>MA Foreign Lit &amp; Language, Portland State U, OR &lt;br&gt;CERT Test, Portland State U, OR</td>
</tr>
<tr>
<td>Urbina, Joe M.</td>
<td>Instr/ABE/GED</td>
<td>BA Liberal Studies, California State U- L.A., CA &lt;br&gt;MED Adult Education, Eastern Washington U, WA</td>
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<tr>
<td>Urbina, Marlo M.</td>
<td>Spec/Student Res</td>
<td>BS Sociology, Oregon State U, OR</td>
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<tr>
<td>Van Orman, Ann L.</td>
<td>Coord/Comm Ed Program</td>
<td>BS Human Services, U of Oregon, OR</td>
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<tr>
<td>Vega, Emiliano D.</td>
<td>Instr/Math</td>
<td>BS Medical Imaging &lt;br&gt;BA English, SUNY Buffalo Main Camp, NY &lt;br&gt;MA English, SUNY Buffalo Main Camp, NY</td>
</tr>
<tr>
<td>Vergun, Robert A.</td>
<td>Research Analyst</td>
<td>BA Economics, U of CA/Santa Cruz, CA &lt;br&gt;MA Economics, U of California/Berkeley, CA &lt;br&gt;PHD Economics, U of California/Berkeley, CA</td>
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<td>Victorino, Robert J.</td>
<td>Spec/EMS Prog</td>
<td>AAS Emergency Services, Austin CC, TX</td>
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<td>Vincent, Bradford</td>
<td>Instr/Real Estate</td>
<td>BA Business Administration, Portland State U, OR &lt;br&gt;MST Business Education, Portland State U, OR</td>
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<td>Vogel, Therese C.</td>
<td>Instr/Nursing</td>
<td>MS Nursing, U Pittsburgh Main Camp, PA</td>
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<td>Volinski, Janice L.</td>
<td>Grants Officer</td>
<td>BS Business &amp; Admin Studies, Lewis &amp; Clark College, OR</td>
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<td>Vollet, Carly M.</td>
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<td>BS Mathematics, Portland State U, OR</td>
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<td>Voth, Judith M.</td>
<td>Instr/ABE/GED</td>
<td>BA Sociology, Willamette U, OR &lt;br&gt;MS Education, Portland State U, OR</td>
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<td>Vu, Trinh T.</td>
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<td>MS Chemistry, Portland State U, OR</td>
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<td>Div Dean &lt;br&gt;BA Speech, U of California-Santa Bar, CA &lt;br&gt;MA Speech, Pennsylvania State U, PA &lt;br&gt;PHD Speech Communication, Pennsylvania State U, PA</td>
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<td>Wang, Laura J.</td>
<td>Mgr/End User</td>
<td>BS Health Care Administration, Concordia U, OR</td>
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