Welcome to Portland Community College.

This catalog is a tool kit. Dig around and you’ll find exactly the right tool for whatever project you have.

Are you looking for an affordable launch pad for a four-year degree? This catalog is Step 1. Are you looking for training in a new career or re-training in your current one? Seeking a certificate for professional development? Are you a high school student hoping for an alternative route to your diploma or on the hunt to make your education more challenging?

The tool kit is right here.

Our enrollment has increased greatly, up almost 20 percent over last year. But we knew this was coming and we’re ready to absorb the additional students. We recently opened administrative offices in downtown Portland, freeing up space on our three campuses for more classrooms and labs. We opened the Willow Creek Center in Washington County. We’ve purchased land in Newberg for a new classroom facility. Plus, thanks to our successful bond measure in 2008, we are in the early stages of revamping and expanding our three primary campuses – Sylvania in Southwest Portland, Rock Creek in Washington County and Cascade in North Portland – as well as the Southeast Center on 82nd Avenue and Division.

The recent recession and the slow recovering have forced many of us to re-evaluate our life plans. Portland Community College is there to help make that process work. Our goal is to better serve this community, to help drive the region out of its economic doldrums and to train the workforce of today and of tomorrow.

This catalog is the way to start.

2010–11 Board of Directors

Denise Frisbee, Zone 1  
Harold C. Williams, Zone 2  
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Mission

Portland Community College provides access to an affordable, quality education in an atmosphere that encourages the full realization of each individual's potential. The college offers opportunities for academic, professional, and personal growth to students of all ages, races, cultures, economic levels, and previous educational experiences.

Portland Community College is a public, multi-campus, comprehensive community college serving the lifelong learning needs of our students. We offer college transfer programs; career technical education programs; adult basic skills; opportunities to develop English as a second language; high school completion and dual credit; community and continuing education programs; and service-learning opportunities that foster the development of civic responsibility and engagement. Through extensive partnerships with business, industry, labor, educational institutions and the public sector, we provide training and learning opportunities for the local and state workforce and promote economic and community development.

Values

- Quality, lifelong learning experiences that helps students to achieve their personal and professional goals
- An environment that is committed to diversity as well as the dignity and worth of the individual
- Continuous professional and personal growth of our employees and students
- Effective teaching and student development programs that prepare students for their roles as citizens in a democratic society in a rapidly changing global economy
- Academic freedom and responsibility - creating a safe environment where competing beliefs and ideas can be openly discussed and debated
- Sustainable use of our resources
- Collaboration predicated upon a foundation of mutual trust and support
- An agile learning environment that is responsive to the changing educational needs of our students and the communities we serve
- Accountability based upon an outcomes-based approach in education
- The public's trust by effective and ethical use of public and private resources
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TEN STEPS TO ACHIEVING YOUR DREAM

STEP 1–APPLY FOR ADMISSION

www.pcc.edu/admissions

Apply online or in-person at one of our Admission 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 www.pcc.edu/about/international/admissions.

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.
4. Proof of finances (bank letter, financial guarantee)
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 hours 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 admissions policy to the contacts listed below at the campus they wish to attend. There is no guarantee that requests will be approved. It
Getting Started

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.
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
   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 permit-
   ted 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

PAVTEC AND DUAL CREDIT
www.pcc.edu/pavtec/dual

The 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 teachers. 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 45 high school sites (some outside of the PCC district) par-
ticipate 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 Educa-
tion, 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 16 PCC Lower Division Transfer subject areas. Examples
include American Sign Language, Biology, Computer Science,
Dance, English, Mathematics, Writing and History.

EXPANDED OPTIONS PROGRAM (EOP)
PCC partners with local high schools to provide opportunities for
high school students to take regular PCC courses through the Ex-
panded 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 se-
niors 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
through the PAVTEC Education Consortium and the PCC High
School Completion program.

OTHER PROGRAMS

For a complete list of high school programs please visit
www.pcc.edu/pavtec/options/default.htm to learn about high
school completion options and getting a head start on college.

DEGREE PARTNERSHIP PROGRAMS

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 campuses
- 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 & 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.

OTHER COMMON FEES

http://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.

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

FINANCIAL AID

www.pcc.edu/fa

There’s a good chance you qualify for financial assistance. 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). Don’t forget to sign up for FA direct deposit!!

VETERANS’ BENEFITS

www.pcc.edu/vets

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

Effective fall 2010, senior citizens will be eligible for our new Senior Options tuition waiver for credit courses, courtesy of an Oregon legislative initiative. The existing non-credit discount for seniors will remain in effect. For complete details, please visit: http://www.pcc.edu/resources/tuition-fees/

PAYING IN INSTALLMENTS—THE 50/50 PLAN

www.pcc.edu/resources/tuition-fees/payment-info/installments.html

The 50/50 plan is free and it allows students to pay half of their balance on the term due date and defer the balance for an additional 4 weeks. Submit your completed application to any campus business office prior to the start of term.

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.

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.

COURSE CHALLENGE

Some courses offered at Portland Community College may be challenged. This allows a student to receive credit by taking a special examination. Students who wish to challenge a course must accept the following conditions:

1. Designated credit courses may be challenged by special examination at a time set by the appropriate department chair or instructional administrator. Check with the department to see which courses can be challenged.

2. Students currently enrolled in such a course must request a challenge prior to the third week of classes or in a proportionate period of time for courses less than one term. Students must have formally withdrawn from class prior to submitting the challenge form and taking the exam.

3. Students must be currently registered in credit classes or have previously completed credit classes at PCC. Students must have an established PCC transcript before challenge credits will be recorded.
4. Challenge credit may not be used to meet the 30 quarter hour residency requirement.

5. If the student successfully challenges the course, the student will pay the course tuition rate in effect at the time of testing, in order to receive credit.

6. The department may issue a letter grade or “Pass” for successful completion of a challenge. The grade will be added to the student’s academic record using a Grade Review Request Form submitted by the department chair. All challenge courses will appear on the transcript with such indication. Students must assume the responsibility for determining if the challenge credit earned at PCC is transferable to other institutions.

7. Students may take the challenge exam for a specific course only once.

8. Students may not challenge a course in which they have previously enrolled or audited and received either a letter grade or a mark (A, B, C, D, F, W, CIP, CIPR, I, NP, P, AUD, or X.).

9. Test scores may be required before a student may take a challenge exam for a specific course.

STEP 4–ATTEND A NEW STUDENT ORIENTATION

http://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 do it online.

STEP 5–MEET WITH AN ADVISOR OR COUNSELOR

www.pcc.edu/advising

An advisor or counselor 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 web site https://my.pcc.edu. Other options include fax, in-person, and mail-in processes. Specific registration information and procedures are in the quarterly schedule of classes available at any PCC facility, plus many other public sites around the community. 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, counselor or department chair. At their discretion, an excess of 19 credits may be allowed. Advisors, counselors 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 to attend 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 DEADLINE

DROP DEADLINE FOR REMOVAL OF TUITION & FEES

<table>
<thead>
<tr>
<th>Length of Class</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 weeks</td>
<td>Prior to first day class meets</td>
</tr>
<tr>
<td>2–7 week classes</td>
<td>By the end of first day of classes</td>
</tr>
<tr>
<td>8–10 week classes</td>
<td>By the end of first week of classes</td>
</tr>
<tr>
<td>11–12 week classes</td>
<td>By the second Friday of the term</td>
</tr>
</tbody>
</table>

WITHDRAWAL DEADLINE

<table>
<thead>
<tr>
<th>Length of Class</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short classes</td>
<td>Before the first day</td>
</tr>
<tr>
<td>2–7 week classes</td>
<td>In the first 80% of class meetings</td>
</tr>
<tr>
<td>8–10 week classes</td>
<td>In the first 80% of class meetings</td>
</tr>
<tr>
<td>11–12 week classes</td>
<td>Through the eighth week</td>
</tr>
</tbody>
</table>

For more information see the website: www.pcc.edu/registration/dropping.html

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 published in the quarterly schedule of classes.

WITHDRAWING 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 credit hours 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 credit hours 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 - 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/resources/parking/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 credit hours. 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/resources/tuition-fees

STUDENT FINANCIAL RESPONSIBILITIES
When you register for a class, you are giving your consent to pay all of the charges associated with the class, whether or not you attend. 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. You are responsible for keeping PCC informed of any address or telephone changes. 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 fees and related costs. If you are unable to attend, remember to drop the class, even if you are only on the wait list. Once you are enrolled in a class, tuition charges will be removed only if your drop is received by the student-initiated drop deadline published in the class schedule.

All term charges must be paid in full before a student will be allowed to register for the next term.

BILLING INFORMATION
Bills are issued the Wednesday before term begins. 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. You are expected to pay on time even if you do not receive a bill.

To receive a paper schedule or bill, contact any Student Services Office and a copy will be provided.

LATE PAYMENT
Past due accounts are subject to late payment penalties and financial holds which restrict future registration, transcripts and other college services.

Accounts referred for collection are subject to collection costs and attorney fees. Students with past due accounts may also be institutionally withdrawn from courses or required to pay upon registration.

REMOVING TUITION CHARGES
Classes must be officially dropped online using MyPCC or by submitting an Add/Drop form with the Registration Office. It is the responsibility of the student to confirm the dropped status. If the student does not receive written confirmation of the drop, the student 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
Students who were unable to complete course(s) due to circumstances beyond their ability to control, 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.

The Student Account Petition form and additional information is available online via MyPCC or at any campus Business Office.
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. A check will be issued directly to the student for any refunds resulting from payment by cash or check. 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 Taxpayer Relief Act of 1997 (TRA) created the Hope Scholarship tax credit and the Lifetime Learning tax credit to help families meet the cost of a college 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 and CEU courses.

Limited grants are also available to Oregon residents unable to afford the reduced tuition rates. Grants do not cover lab or other fees, and are not available if you are enrolled in a degree or certification program. To apply, call 503-977-4122. Submit your approved grant authorization to any campus Business Office prior to the payment due date for the term.

STEP 10–GRADUATION
All students graduating from Portland Community College must complete a graduation application, preferably one term in advance of the student’s final term. Graduation applications may be obtained from the Graduation Office or downloaded and printed from www.pcc.edu/graduate. A separate application is required for each degree or certificate.

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 applied by the deadline and the application has not been denied. Information regarding cap and gown purchases is emailed to students who have applied and is also available at www.pcc.edu/graduate.

Graduating students will receive diplomas by mail eight 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 in MyPCC on the College Business tab by clicking on “Order My Official Transcript.” 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:

Student Records
Portland Community College
P.O. Box 19000
Portland, Oregon 97280

CALENDAR OF INSTRUCTION

SUMMER 2010
Term Begins: June 20
Final Exams: Varies**

FALL 2010
Term Begins: September 20
Final Exams: December 6-12

WINTER 2011
Term Begins: January 3
Final Exams: March 14-20
End of Term: March 20

SPRING TERM 2011
Term Begins: March 28
Final Exams: June 6-12
Graduation: June 10
End of Term: June 12

SUMMER 2011
Term Begins: June 20
Final Exams: varies*
End of Term: September 6

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

*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/
ADDITIONAL STUDENT RESOURCES

ATHLETICS
www.pcc.edu/about/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.

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

BOOKSTORES
www.pcc.edu/resources/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 503-977-4910.

Tri-Met bus tickets and bus passes may be purchased at any bookstore. Select student passes 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.

Textbook information will be available on the website prior to registration and books may be purchased two weeks before each term. You should be familiar with the bookstore refund policy at time of purchase. The refund policy and book buy-back times are posted at all bookstores and on the website. A refund may be mailed when circumstances warrant, but allow at least four weeks for processing. Book buy-back times will be posted at each store.

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. Current PCC students may cash checks up to a $10 maximum per day.

CAREER RESOURCE CENTERS
www.pcc.edu/resource/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 resume 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 you find and evaluate the quality of care, arrange financial assistance if you meet specific qualifications, and provides 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.

ROCK CREEK
www.pcc.edu/resources/child-care
The Center offers parents childcare 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-eligible and enrolled full-time at PCC Rock Creek. For questions and application contact 503-614-7511. Evening childcare is available Monday through Thursday for Children ages 4-12. 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/resources/computer-labs
The most comprehensive facilities open to all currently registered PCC students are the Computer Resource Centers located on the Southeast Center, Cascade, Rock Creek and Sylvania campuses. While all currently enrolled PCC students are welcome, an orientation is required before using the centers.

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

COOPERATIVE EDUCATION
www.pcc.edu/resources/careers/Cooperative
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 bonaﬁde work experience to be included on a resume. Cooperative Specialists will help the student identify eligible worksites, apply for positions, and support students as they complete their work experience.
COUNSELING SERVICES
www.pcc.edu/resources/counseling
Portland Community College provides a comprehensive program of counseling services designed to assist students in solving problems and in developing academic and personal potential. Professional counselors are available at the Cascade, Rock Creek and Sylvania campuses and the Southeast Center. They help in matters such as career development and exploration, learning problems and study skills, and assessment of abilities, interests and values. Counselors can also help with family, personal and social concerns.

DISABILITY SERVICES
www.pcc.edu/resources/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 activities 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 timelines 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).

Corrective Physical Education: Specialized courses instructed and supervised by a qualified instructor are available through the colleges Physical Education Department.

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 these campuses.

FOOD SERVICES
www.pcc.edu/resources/dining
The college offers weekday food services at Sylvania, Southeast, Cascade and Rock Creek. Saturday service is available at Rock Creek, Southeast and Sylvania.

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 visit our website: www.pcc.edu/camp, or if you want to contact our (CAMP/Recruit-er) at 503-614-7445.

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.

SYLVANIA Roots
www.pcc.edu/pcc/resources/roots
The Sylvania 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.

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The program provides individualized academic advising; personal financial aid counseling, degree & transfer planning, free college success classes, scholarship application support, and visits to 4 year colleges at no cost to the student. Apply online or visit the ROOTS office on the Sylvania Campus, CC 225.

UPWARD BOUND
www.pcc.edu/prepare/head-start/upward-bound.html
The Upward Bound program prepares students for college during their high school years by providing tutoring, advising and mentoring services, as well as opportunities to explore various careers.

Exposure to the college environment is important, and Upward Bound representatives visit local colleges and universities throughout the year. During the summer Upward Bound participants attend classes at PCC's Sylvania campus for five weeks and experience college life during a residential stay at Oregon State University.

Upward Bound offers a comprehensive set of services to help students succeed in high school and enter and complete college in order to obtain rewarding and satisfying careers.

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 four-year college degree. The goal of ETS is to increase the number of youth from disadvantaged backgrounds who complete high school and enroll in college. Talent Search also serves students who dropped out of high school by encouraging them to re-enter the educational system and complete their education. For more information contact: 503-614-7572

HEALTH SERVICES AND INSURANCE
Portland Community College provides no health services on its campuses. Emergency medical treatment while on campus is available by calling 503-977-4444.

PCC students of any age are not insured by the college for health and accident. However, students who are registered for nine or more credit hours may purchase student health insurance on a voluntary basis. The application form and brochure detailing the coverage and its cost are available on campus in the information center.

HOUSING
Portland Community College does not provide housing for students attending the college.

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 also 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 CENTER AND PROGRAMS
www.pcc.edu/resources/culture
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, sponsors 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. It is open Monday through Friday with varying hours 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/services/index.cfm/145.html
Portland Community College offers the Oregon Leadership Institute (OLI) at the Rock Creek Campus as 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 program 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/about/international
The Office of International Education (OIE) offers academic and immigration advising and a comprehensive student activities program to introduce students to Oregon and cultures of the United States.

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, as well as social sciences. In addition, PCC has an academic term 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
The Office of Student Employment is a job referral service 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 Specialist representatives 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/resources/aspcc
The college encourages activities that complement the instructional program by providing opportunities for leadership and representation in college decision making and by offering social, cultural and recreational activities. Student activities, organizations and programs are open to all students. Information is available at Associated Students of Portland Community College (ASPCC) Offices.

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. Student council members are hired rather than elected and are paid for their services. Other paid positions include secretary, activities assistant and sign maker. Volunteers are also encouraged to be active in clubs and committees. ASPCC provides housing referrals, car pool opportunities and book buy-back exchanges.

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/about/theatre
The drama program offers students a chance to perform and to assist in the production of plays featured each term. Plays are produced and performed at the Rock Creek and Sylvania campuses.

TUTORING
www.pcc.edu/resources/tutoring
Free learning assistance for PCC students is available day and night hours at Learning Centers at each campus. Tutoring, 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, comfortable and safe environment to all PCC students. The Center offers programs to support the personal and academic growth of students. It is a place to gain information and encouragement and provides a connection to both campus and community resources.

Project Independence is a re-entry program for single parents and displaced homemakers. This tuition free program is offered fall, winter and spring terms. Students in the program receive personalized assistance in building self-confidence, clarifying values, exploring careers and setting goals. The program is offered at both Cascade Campus and Southeast Center.

The Women’s Resource Center offers workshops, seminars, lecture, and scholarship workshops to students and community members. The Women’s Resource Center Student Advisory Board plans the program and serves as peer support for students. Staff members are available to assist students in accessing campus and community resources.

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 Transiciones 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.
The Southeast Center is currently developing a Women’s Resource Center. A listing of available resources and a well as 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 parents 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.

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

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 you have not been consecutively enrolled (earning at least one credit per academic year) at the time you apply for graduation, you must meet the requirements of the most current catalog. Your degree will be awarded based on your application date.

An edition of the catalog is valid for six academic years. For example, a catalog that takes effect fall term 2005 is only valid through summer term 2011. 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, email 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, counselors 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 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 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. 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. 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 six 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. 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 credit hours, career pathway certificates need to meet less than one year or one year certificate requirements.
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 the AAOT, AS, ASOT-BUS and AAS 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 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 the 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 12 credits of SP 270 may be applied to associate degrees.
   - 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. 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
   - 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 waiver of 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, Natural and Physical Science, and Computer Studies

   The 16 credits must include at least one course with a minimum of three credits from each category. 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 degree program for advice on General Education courses appropriate to their goals and interests. General Education requirements will be waived for students who enroll at PCC with an A.A., A.A.S., A.G.S., A.S., B.A., B.S. 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, or
   - Passing the PCC WR 121 Challenge Exam. Students must meet criteria to sit for the exam.

*See Course Descriptions in PCC Catalog for a complete list.
Students with A.A., A.A.S., A.G.S., A.S., B.A., B.S., 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.

**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, Natural and Physical Sciences and Computer Studies

   The 16 credits must include at least one course with a minimum of three credits from each category. The General Education requirements for the AGS degree will be waived for students who enroll at PCC with an A.A., A.A.S., A.G.S., A.S., B.A., B.S. 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 or
   - Passing the PCC WR 121 Challenge Exam. Students must meet criteria to sit for the exam.

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

**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 Associate of Arts Oregon 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. **Writing**: All candidates must complete a minimum of six credits with a C or better in English Composition by passing WR 121 with a C or better, or passing the WR 121 challenge exam and passing another Lower Division Collegiate WR course with WR 121 as a prerequisite, with a C or better.

   B. **Health**: Complete HE 250 Personal Health and 1 credit (100 level or above) of Physical Education (PE) or complete HPE 295 Health & Fitness for Life.

   C. **Math**: Complete minimum of four credits with a C or better in MTH 105 or any math course with Intermediate Algebra as a prerequisite.

   *Basic Writing and Math competency will be met by these requirements.
D. General Education/Discipline Studies 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, Natural and Physical Sciences and Computer Studies

E. 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 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

   A. Writing: Students must complete a minimum of 8 hours in writing with a C or better. The courses must be selected from WR 121, 122, & WR 227.

   B. Math: Students must complete a minimum of 12 credits in MTH 111B or above with a C or better, 4 of which must be statistics.

   C. 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.

   D. Speech: Minimum of 3 credits of Public Speaking completed with a C or better.

   E. General Education/Discipline Studies Distribution Requirements: Students must earn the following credits from the General Education Distribution/Discipline Studies List.

   - Arts and Letters: Must complete a minimum of 12 credits chosen from at least two disciplines. One of the courses must be SP 111, completed with a C or better. Second year of World Languages (including ASL) may be included, but not first year.

   - Social Science: Must complete a minimum of 12 credits with a minimum of eight credits in microeconomics and macroeconomics with a C or better.

   - Science: Must complete a minimum of 12 credits of laboratory courses in the biological or physical sciences.

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

F. Elective Requirements: Must complete additional elective or university specific prerequisite courses* for a minimum of 90 credits. The ASOT-BUS may include up to a maximum of 12 credits of career technical courses (these 12 credits do not include the career technical required coursework in the degree). 1-credit MSD workshops may not be applied to this degree. May include up to a maximum of 3 Physical Education courses.

UNIVERSITY SPECIFIC PREREQUISITES, RECOMMENDATIONS:

Each OUS school has different requirements for their Business program. Please refer to your school’s website for additional courses beyond the minimum requirements for the ASOT-BUS degree.

EASTERN OREGON UNIVERSITY
www.eou.edu/business/bdm_course_transfer.htm

OREGON INSTITUTE OF TECHNOLOGY
www.oit.edu/programs/manage

OREGON STATE UNIVERSITY
www.bus.oregonstate.edu/services/articulationlinks/2007-2008/default.htm

PORTLAND STATE UNIVERSITY
www.pdx.edu/business/sba/transfer-students

SOUTHERN OREGON UNIVERSITY
www.sou.edu/business/undergrad/index.html

UNIVERSITY OF OREGON

WESTERN OREGON
www.wou.edu/las/business/major.php
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 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**: 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 course from HE 242, 250, 254, HPE 295, or three PE courses (not including PE10, 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 the this area
   • **Social Sciences**: Complete at least 4 courses chosen from at least two disciplines in the this area

   • **Science/Math/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) courses 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.
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AGRICULTURAL MECHANICS

Rock Creek Campus
Building 2, Room 230
503-614-7210 or 503-614-7331

The AAS degree in Agricultural Mechanics has been suspended for the 2010-2011 academic year. Please contact the department for more information.

ALCOHOL AND DRUG COUNSELOR

Cascade Campus
Jackson Hall (JH), Room 210
Program Admissions: 503-978-5667
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. Attendance at A&D Counselor Program orientation session.
2. Readiness for entry into WR 121 English Composition.
3. Completion of AD 101 Alcohol Use and Addiction, with a C or better.
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 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 503-978-5254.

The program has an agreement with Warner Pacific College, Concordia University and Grand Canyon University allowing graduates to be accepted at the junior level to work toward a bachelor's degree. Other four-year institutions may also 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.

Students may enroll in AD 101, AD 102, AD 103, AD 104, AD 184, WR 121, WR 122, PSY 239 and General Education courses prior to being accepted into either the degree or the certificate program. Although only required for the prevention program award AD 241, AD 242 and AD 243 can be taken without program admission.

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 (ACCB0). Completion of The Alcohol and Drug Counselor Program does not result in completion of the CADC. The program does, however, meet the educational guidelines required for the CADC II and provides 720 practicum hours that contribute to the “supervised experience” requirement of 1000 hours for CADC Level 1.

ALCOHOL AND DRUG COUNSELOR AAS DEGREE

Minimum 96 credit hours. 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 Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<td>Alcohol and Drug Core Courses</td>
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<tr>
<td>Cooperative Education</td>
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<tr>
<td>Remaining General Education</td>
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<td>Credit Total</td>
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Alcohol and Drug Core Courses

- AD 101 Alcohol Use and Addiction 3
- AD 102 Drug Use and Addiction 3
- AD 103 Women and Addiction 3
- AD 104 Multicultural Counseling 3
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 & Addiction 3
AD 156 Ethical and Professional Issues 3
AD 157 Motivational Interviewing Skills Mastery 1
AD 184 Men & Addiction 3
AD 201 Families and Addiction 3
AD 250 Advanced Counseling and Addiction 3
AD 251 Advanced Counseling Skills Mastery 1
AD 255 Multiple Diagnoses 3
AD 278 Practicum Preparation 1
PSY 201 Introduction to Psychology Part I* 4
or
PSY 202 Introduction to Psychology Part II* 4
PSY 239 Introduction to Abnormal Psychology* 4
WR 121 English Composition 4
WR 122 English Composition 4

*Could be used as General Education

General Education and Cooperative Education
Remaining General Education 8
AD 270A CE: Addiction Practicum¹ 18
AD 270B CE: Addiction Practicum-Seminar² 8

¹Students are required to complete 18 credit hours, which equals at least 720 clock hours of practicum.
²Students attend a concurrent two credit seminar each term.

ADDITION STUDIES CERTIFICATE
Minimum 44 credit hours. The Addiction Studies Certificate is a related certificate. All courses within the certificate are contained in the Alcohol and Drug Counselor AAS Degree.

Addiction Studies Certificate Credit Summary
Addiction Studies Core Courses 30
Cooperative Education 14
Credit Total 44

Addiction Studies Core Courses
AD 101 Alcohol Use and Addiction 3
AD 102 Drug Use and Addiction 3
AD 104 Multicultural Counseling 3
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 & Addiction 3
AD 156 Ethical and Professional Issues 3
AD 157 Motivational Interviewing Skills Mastery 1
AD 278 Practicum Preparation 1

Cooperative Education
AD 270A CE: Addiction Practicum¹ 10
AD 270B CE: Addiction Practicum-Seminar² 4

¹Students are required to complete 10 credit hours (400 clock hours) of practicum.
²Students attend a concurrent two-credit seminar each term.

PREVENTION SPECIALIST PROGRAM AWARD
Minimum 32 credit hours; includes 24 credit hours of alcohol, tobacco and other drug prevention, academic, skill training and speech courses, and six credit hours of supervised experiential learning. Prevention specialists serve as resource persons to assist in community alcohol, tobacco and other drug prevention efforts, as well as concurrent general prevention activities such as violence, HIV/STD and/or teen pregnancy prevention.

The Certified Prevention Specialist is granted by the Addiction Counselor Certification Board of Oregon. Alcohol and drug prevention courses will meet the education and supervised experiential learning requirements for the certified prevention specialist examination.

AD 101 Alcohol Use and Addiction 3
AD 102 Drug Use and Addiction 3
AD 104 Multicultural Counseling 3
AD 241 Prevention Theory and Practice 3
AD 242 Community Organization 3
AD 243 Planning and Evaluating Outcomes 3
AD 270C CE: Prevention Practicum 6
AD 270D CE: Prevention Practicum-Seminar 4
SP 111 Public Speaking 4

AMERICAN SIGN LANGUAGE
SEE SIGN LANGUAGE STUDIES

ANTHROPOLOGY

Cascade Campus
Liberal Arts & Mathematics Division
Terrell Hall (TH) Room 220
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7327

Sylvania Campus
Social Science, (SS) Room 217
503-977-4289

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
503-978-5651, 503-978-5650
www.pcc.edu/programs/apprenticeship/

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 apprenticeable 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 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 & 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 & Maintenance Technologies Apprenticeship

Certificate of Completion
- Limited Electrician Apprenticeship Technologies
- Electrician Apprenticeship Technologies
- Manual Trades Apprenticeship
- Construction Trades, General Apprenticeship
- Mechanical Maintenance Apprenticeship
- Industrial Mechanics & 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. Woman 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.

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 total 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 & MAINTENANCE TECHNOLOGY APPRENTICESHIP PATHWAY

INDUSTRIAL MECHANICS & 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 & 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 total 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 list for approved courses

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 General Sociology
- PSY 216 Social Psychology

ARCHITECTURAL DESIGN AND DRAFTING

Sylvania Campus
Science Technology Building (ST), Room 208
503-977-4163
www.pcc.edu/programs/architectural-design/

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 Building 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. Sustainable Building 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
- Architectural Design and Drafting
- Architectural Design and Drafting-Residential Option

Two-Year Certificate
- Kitchen and Bath

Less than One-Year Certificate
- Sustainable Building
**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 drafting classes or have department approval.

**ARCHITECTURAL DESIGN AND DRAFTING AAS DEGREE**

Minimum 99 credit hours. 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>
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<tbody>
<tr>
<td>ARCH</td>
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<tr>
<td>General Education</td>
<td>16</td>
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<tr>
<td>ARCH Degree Electives</td>
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<tr>
<td>ARCH CAD Electives</td>
<td>3</td>
</tr>
<tr>
<td>ART</td>
<td>3</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>4</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**
- ARCH 110 Introduction to Architectural Drawing 2
- ARCH 121 Structural Systems I 2
- ARCH 124 Introduction to Building Systems 3
- ARCH 126 Introduction to AutoCAD 3
- ARCH 127 Introduction to Google Sketch-up 3

**Second Term**
- ARCH 101 Architectural Graphics I 3
- ARCH 132 Residential Building Codes 2
- ARCH 122 Structural Systems II 4
- ARCH 136 Intermediate AutoCAD 3
- CAD Electives 3

**Third Term**
- ARCH 111 Working Drawings I 3
- ARCH 113 Site Planning 2
- ARCH 123 Structural Systems III 4
- ARCH 224 Active & Passive Building Systems 4
- ARCH 256 Detail Drawing with AutoCAD 3

**Fourth Term**
- ARCH 112 Working Drawings II 3
- ART 215 History of American Residential Architecture 3
- General Education 8

**Fifth Term**
- ARCH 102 Architectural Graphics II 3
- ARCH 133 Commercial Building Codes 2
- ARCH 201 Residential Studio 6
- ARCH Degree Electives 3

**Sixth Term**
- ARCH 202 Commercial Studio 6
- ARCH Degree Electives 3
- General Education 4

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

**Architectural Degree Electives**
- ARCH 100 Graphic Communication for Designers 3
- ARCH 131 Sustainable Building Strategies 4
- ARCH 200 Principles of Architectural Design 4
- ARCH 204 Green Residential Studio 4
- BCT 108 Intro to Building Science 3
- BCT 116 Alternative Building Design 3
- BCT 206 Sustainable Construction Practices 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 & Bath Planning 3
- ID 236 Lighting Design 3
- ID 238 Advanced Kitchen and Bath Planning 3

**Architectural CAD Electives**
- ARCH 137 AutoCAD Architecture 3
- ARCH 237 Introduction to Autodesk Revit 3
- ARCH 247 Intermediate Revit Architecture 3

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

Minimum 97 credit hours. 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.

### ARCH Design & Drafting Residential Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>53</td>
</tr>
<tr>
<td>ID</td>
<td>18</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>ART</td>
<td>3</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>4</td>
</tr>
<tr>
<td>Residential CAD Electives</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>97</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**
- ARCH 100 Graphic Communication for Designers 3
- ARCH 110 Introduction to Architectural Drawing 2
- ARCH 121 Structural Systems I 2
- ARCH 124 Introduction to Building Systems 3
- ARCH 126 Introduction to AutoCAD 3

**Second Term**
- ARCH 101 Architectural Graphics I 3
- ARCH 122 Structural Systems II 4
- ARCH 132 Residential Building Codes 2
- ARCH 136 Intermediate AutoCAD 3
- ID 131 Introduction to Interiors 3

**Third Term**
- ARCH 111 Working Drawings I 3
- ARCH 113 Site Planning 2
- ARCH 123 Structural Systems III 4
- ARCH 224 Active & Passive Building Systems 4
- ARCH 253 Detail Drawing with AutoCAD 3

**Fourth Term**
- ARCH 112 Working Drawings II 3
- ART 215 History of American Residential Architecture 3
- General Education 8

**Fifth Term**
- ARCH 102 Architectural Graphics II 3
- ARCH 133 Commercial Building Codes 2
- ARCH 201 Residential Studio 6
- ARCH Degree Electives 3

**Sixth Term**
- ARCH 202 Commercial Studio 6
- ARCH Degree Electives 3
- General Education 4

**Second Term**
- ARCH 101 Architectural Graphics I 3
- ARCH 122 Structural Systems II 4
- ARCH 132 Residential Building Codes 2
- ARCH 136 Intermediate AutoCAD 3
- ID 131 Introduction to Interiors 3
### KITCHEN AND BATH CERTIFICATE

Minimum 62 credit hours. Students must 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>Planning Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>Space Planning</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>Introduction to Kitchen and Bath Planning</td>
<td>3</td>
</tr>
<tr>
<td>WR</td>
<td>English Composition (or higher)</td>
<td>4</td>
</tr>
<tr>
<td>BCT</td>
<td>Kitchen and Bath Cabinet Installation</td>
<td>2</td>
</tr>
<tr>
<td>ID</td>
<td>Professional Practice for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>CAD for Kitchen and Bath Design</td>
<td>1</td>
</tr>
<tr>
<td>ID</td>
<td>Lighting Design</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>Advanced Kitchen and Bath Planning</td>
<td>3</td>
</tr>
<tr>
<td>MTH</td>
<td>Introductory Algebra (or higher)</td>
<td>4</td>
</tr>
</tbody>
</table>

### SUSTAINABLE BUILDING CERTIFICATE

Minimum 42 credit hours. Students must meet certificate requirements.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>Working Drawings I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH</td>
<td>Structural Systems I</td>
<td>2</td>
</tr>
<tr>
<td>ARCH</td>
<td>Residential Building Code</td>
<td>2</td>
</tr>
<tr>
<td>ART</td>
<td>History of American Residential Architecture</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>CE: Kitchen and Bath</td>
<td>3</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 Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>Architectural Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH</td>
<td>Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>PHL</td>
<td>Introduction to Environmental Ethics</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>Sustainable Building Strategies</td>
<td>4</td>
</tr>
<tr>
<td>BCT</td>
<td>Active &amp; Passive Bldg Systems</td>
<td>4</td>
</tr>
<tr>
<td>SOC</td>
<td>Environmental Sociology</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ESR</td>
<td>Environmental Science: Biological Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>ESR</td>
<td>Environmental Science: Chemical Perspectives</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT</td>
<td>Architectural Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>BCT</td>
<td>Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>ID</td>
<td>Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>PHL</td>
<td>Introduction to Environmental Ethics</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Fifth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT</td>
<td>Sustainable Building Strategies</td>
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</tr>
<tr>
<td>BCT</td>
<td>Active &amp; Passive Bldg Systems</td>
<td>4</td>
</tr>
<tr>
<td>SOC</td>
<td>Environmental Sociology</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESR</td>
<td>Biological Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>ESR</td>
<td>Chemical Perspectives</td>
<td>4</td>
</tr>
</tbody>
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**Portland Community College • 2010–2011**
ART

Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 105
503-978-5340

Rock Creek Campus
Building 3, Room 201
503-614-7235

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6147

Sylvania Campus
Communications Technology Building (CT), Room 216
503-977-4264

www.pcc.edu/programs/art/

DESCRIPTION
The Art curriculum at PCC offers lower division college transfer courses in art history (year-long sequences in western art, Asian art, modern art; term courses in women in art, American residential architecture, and comics art), basic design (black and white, color, 3-D), painting (including life painting), sculpture (carving, figure sculpture, plaster and clay, welding), ceramics, drawing (including life drawing), photography (darkroom and digital), printmaking, calligraphy, and watercolor.

Students exercise a wide range of technical, aesthetic, communication and problem-solving skills applicable to many career opportunities in an atmosphere that encourages the full realization of each individual’s potential. Studio and art history classes play a vital role in a general liberal arts education as well as prepare students to become working artists or art historians. 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
503-614-7331

www.pcc.edu/programs/auto-collision/

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
ASSOCIATE OF APPLIED SCIENCE DEGREE
Minimum 90 credit hours. 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

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>AB</td>
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<td>General Education</td>
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<td><strong>Credit Total</strong></td>
<td><strong>90</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>AB 100 Auto Body Basic Skills</td>
<td>12</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 105 Frame Analysis &amp; Repair</td>
<td>12</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 106 Panel Repair</td>
<td>12</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 201 Panel Replacement</td>
<td>12</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 205 Technical Skills and Collision Repair</td>
<td>12</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>WLD 211 Auto Collision Repair Welding Aluminum</td>
<td>2</td>
</tr>
</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB 280A CE: Auto Body Repair</td>
<td>10</td>
</tr>
<tr>
<td>AB 280B CE: Auto Body Repair- Seminar</td>
<td>2</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>
AUTO COLLISION REPAIR TECHNOLOGY
TWO-YEAR CERTIFICATE
Minimum 72 credit hours. 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 Two-Year Certificate
Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>60</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>12</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>72</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
- AB 100 Auto Body Basic Skills 12

Second Term
- AB 105 Frame Analysis & Repair 12

Third Term
- AB 106 Panel Repair 12

Fourth Term
- AB 201 Panel Replacement 12

Fifth Term
- AB 205 Technical Skills and Collision Repair 12

Sixth Term
- AB 280A CE: Auto Body Repair 10
- AB 280B CE: Auto Body Repair Seminar 2

AUTO BODY PAINTING CERTIFICATE
Minimum 36 credit hours. Students must meet certificate requirements.

Auto Body Painting Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB</td>
<td>36</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>36</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
- AB 116 Auto Painting I 12

Second Term
- AB 117 Auto Painting II 12

Third Term
- AB 118 Auto Painting III 12

AUTOMOTIVE SERVICE TECHNOLOGY

Sylvania Campus
Automotive Metals Building (AM), Room 210
503-977-4130
www.pcc.edu/programs/auto-service/

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. Auto 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 AST 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 three weeks, 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 105 credit hours. 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>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>88</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>CG</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>105</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>AM 101 Engine Repair I</td>
<td>4</td>
</tr>
<tr>
<td>AM 102 Electrical Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 108 Introduction to Automotive Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 112 Electrical II</td>
<td>4</td>
</tr>
<tr>
<td>CG 209 Job Finding Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 104 Steering and Suspension Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 105 Brake Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 114 Steering and Suspension Systems II</td>
<td>4</td>
</tr>
<tr>
<td>AM 115 Brake Systems II</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 103 Engine Performance I</td>
<td>4</td>
</tr>
<tr>
<td>AM 113 Engine Performance II</td>
<td>4</td>
</tr>
<tr>
<td>AM 123 Engine Performance III</td>
<td>4</td>
</tr>
<tr>
<td>AM 133 Engine Performance IV</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 106 Heating and Air Conditioning Systems</td>
<td>4</td>
</tr>
<tr>
<td>AM 122 Electrical III</td>
<td>4</td>
</tr>
<tr>
<td>AM 143 Engine Performance V</td>
<td>4</td>
</tr>
<tr>
<td>AM 153 Engine Performance VI</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 107 Manual Drive Train &amp; Axles I</td>
<td>4</td>
</tr>
<tr>
<td>AM 117 Manual Drive Train &amp; Axles II</td>
<td>4</td>
</tr>
<tr>
<td>AM 127 Automatic Transmission/Transaxle I</td>
<td>4</td>
</tr>
<tr>
<td>AM 137 Automatic Transmission/Transaxle II</td>
<td>4</td>
</tr>
<tr>
<td>CG 209 Job Finding Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 280A CE: Automotive Service</td>
<td>8</td>
</tr>
</tbody>
</table>

**AUTOMOTIVE SERVICE TECHNOLOGY TWO YEAR CERTIFICATE**

Minimum 89 credit hours. Students must meet certificate requirements. The Automotive Service Technology Certificate is a related certificate. All courses within the certificate are contained in the Automotive Service Technology AAS Degree.

**Automotive Service Technology Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>88</td>
</tr>
<tr>
<td>CG</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>89</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>AM 101 Engine Repair I</td>
<td>4</td>
</tr>
<tr>
<td>AM 102 Electrical Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 108 Introduction to Automotive Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 112 Electrical II</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 104 Steering and Suspension Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 105 Brake Systems I</td>
<td>4</td>
</tr>
<tr>
<td>AM 114 Steering and Suspension Systems II</td>
<td>4</td>
</tr>
<tr>
<td>AM 115 Brake Systems II</td>
<td>4</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 103 Engine Performance I</td>
<td>4</td>
</tr>
<tr>
<td>AM 113 Engine Performance II</td>
<td>4</td>
</tr>
<tr>
<td>AM 123 Engine Performance III</td>
<td>4</td>
</tr>
<tr>
<td>AM 133 Engine Performance IV</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 106 Heating and Air Conditioning Systems</td>
<td>4</td>
</tr>
<tr>
<td>AM 122 Electrical III</td>
<td>4</td>
</tr>
<tr>
<td>AM 143 Engine Performance V</td>
<td>4</td>
</tr>
<tr>
<td>AM 153 Engine Performance VI</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 107 Manual Drive Train &amp; Axles I</td>
<td>4</td>
</tr>
<tr>
<td>AM 117 Manual Drive Train &amp; Axles II</td>
<td>4</td>
</tr>
<tr>
<td>AM 127 Automatic Transmission/Transaxle I</td>
<td>4</td>
</tr>
<tr>
<td>AM 137 Automatic Transmission/Transaxle II</td>
<td>4</td>
</tr>
<tr>
<td>CG 209 Job Finding Skills</td>
<td>1</td>
</tr>
</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 280A CE: Automotive Service</td>
<td>8</td>
</tr>
</tbody>
</table>

*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 for the 2010-2011 academic year. The Automotive Service Technology program will continue to be offered. For more information or availability of individual courses, please contact the department advisor at 503-977-4130 or visit the department website at [http://www.pcc.edu/programs/autoservice/](http://www.pcc.edu/programs/autoservice/).
AVIATION MAINTENANCE TECHNOLOGY

Rock Creek Campus
Building 2, Room 230
503-614-7246
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
All candidates for the AMT Program must have the placement test scores that demonstrate competency in basic reading, writing, and mathematics prior to program entry. AMT 101 is a prerequisite for all AMT courses. Students who are attending only one class and are not an AMT Program participant are an exception.

Minimum test scores are:
Placement into MTH 60
Placement into RD 90
Placement into WR 90

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.
Math competency is met by: successful completion of PCC Math 60 or by successful completion (70% minimum) of the AMT Department Math Competency Test. Department approval is required to take the department Math Competency Test and requires either placement into higher than Math 60 or completion of higher than Math 60. This test may not be repeated within the same term.

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 credit hours. 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
AMT 90
General Education 16
WLD 2
Credit Total 108

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

First Term
AMT 105 Aviation CFRs & Related Subjects 4
AMT 106 Aircraft Applied Science 4
AMT 107 Materials & Processes 4
General Education 4

Second Term
AMT 102 Aircraft Electricity I 4
AMT 203 Aircraft Electricity II 4
AMT 204 Aircraft Electricity III 4
General Education 4

Third Term
AMT 108 AMT Practicum/General 2
AMT 109 Assembly & Rigging 4
AMT 208 Aircraft Systems 4
AMT 211 Composite Structures 4

Fourth Term
AMT 212 Sheet Metal 4
AMT 213 Hydraulics Pneumatics and Landing Gear 4
WLD 210 Aviation Welding 2

Fifth Term
AMT 115 Aircraft Structures & Inspection 4
AMT 117 Reciprocating Engine Theory and Maintenance 4
AMT 214 Instruments, Communication and Navigation Systems 4
AMT 216 AMT Practicum/Airframe 2
Sixth Term
AMT 121 Turbine Engine Theory and Maintenance 4
AMT 219 Turbine Engine Overhaul 4
AMT 222 Reciprocating Engine Overhaul 4
General Education 4

Seventh Term
AMT 120 Propellers and Engine Installation 4
AMT 123 Ignition Systems 4
AMT 124 Fuel Metering Systems 4
General Education 4

Eighth Term
AMT 218 Powerplant Inspection 4
AMT 225 AMT Practicum/Powerplant 2

AVIATION MAINTENANCE TECHNOLOGY
TWO-YEAR CERTIFICATE
Minimum 92 credit hours. Students must meet certificate requirements. The Aviation Maintenance Technology Certificate is a related certificate. All courses within the certificate are contained in the Aviation Maintenance Technology AAS Degree.

Aviation Maintenance Technology Certificate
Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT</td>
<td>90</td>
</tr>
<tr>
<td>WLD</td>
<td>2</td>
</tr>
<tr>
<td>Credit Total</td>
<td>92</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
AMT 105 Aviation CFRs & Related Subjects 4
AMT 106 Aircraft Applied Science 4
AMT 107 Materials & Processes 4

Second Term
AMT 102 Aircraft Electricity I 4
AMT 203 Aircraft Electricity II 4
AMT 204 Aircraft Electricity III 4

Third Term
AMT 108 AMT Practicum/General 2
AMT 109 Assembly & Rigging 4
AMT 208 Aircraft Systems 4
AMT 211 Composite Structures 4

Fourth Term
AMT 212 Sheet Metal 4
AMT 213 Hydraulics Pneumatics and Landing Gear 4
WLD 210 Aviation Welding 2

Fifth Term
AMT 115 Aircraft Structures & Inspection 4
AMT 117 Reciprocating Engine Theory and Maintenance 4
AMT 214 Instruments, Communication and Navigation Systems 4
AMT 216 AMT Practicum/Airframe 2

Sixth Term
AMT 121 Turbine Engine Theory and Maintenance 4
AMT 218 Powerplant Inspection 4
AMT 222 Reciprocating Engine Overhaul 4

Seventh Term
AMT 120 Propellers and Engine Installation 4
AMT 123 Ignition Systems 4
AMT 124 Fuel Metering Systems 4

Eighth Term
AMT 219 Turbine Engine Overhaul 4
AMT 225 AMT Practicum/Powerplant 2

AVIATION MAINTENANCE TECHNOLOGY:
AIRFRAME CERTIFICATE
Minimum 58 credit hours. 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.

Airframe Certificate Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT</td>
<td>56</td>
</tr>
<tr>
<td>WLD</td>
<td>2</td>
</tr>
<tr>
<td>Credit Total</td>
<td>58</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
AMT 105 Aviation CFRs & Related Subjects 4
AMT 106 Aircraft Applied Science 4
AMT 107 Materials & Processes 4

Second Term
AMT 102 Aircraft Electricity I 4
AMT 203 Aircraft Electricity II 4
AMT 204 Aircraft Electricity III 4

Third Term
AMT 108 AMT Practicum/General 2
AMT 109 Assembly & Rigging 4
AMT 208 Aircraft Systems 4
AMT 211 Composite Structures 4

Fourth Term
AMT 212 Sheet Metal 4
AMT 213 Hydraulics Pneumatics and Landing Gear 4
WLD 210 Aviation Welding 2

Fifth Term
AMT 115 Aircraft Structures & Inspection 4
AMT 214 Instruments, Communication and Navigation Systems 4
AMT 216 AMT Practicum/Airframe 2

AVIATION MAINTENANCE TECHNOLOGY:
POWERPLANT CERTIFICATE
Minimum 60 credit hours. Students must meet certificate requirements. The Powerplant Certificate is a related certificate. All courses within the certificate are contained in the Aviation Maintenance Technology AAS Degree.

Powerplant Certificate Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT</td>
<td>60</td>
</tr>
<tr>
<td>Credit Total</td>
<td>60</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
AMT 105 Aviation CFRs & Related Subjects 4
AMT 106 Aircraft Applied Science 4
AMT 107 Materials & Processes 4
### Second Term
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 102</td>
<td>Aircraft Electricity I</td>
<td>4</td>
</tr>
<tr>
<td>AMT 203</td>
<td>Aircraft Electricity II</td>
<td>4</td>
</tr>
<tr>
<td>AMT 204</td>
<td>Aircraft Electricity III</td>
<td>4</td>
</tr>
</tbody>
</table>

### Third Term
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 108</td>
<td>AMT Practicum/General</td>
<td>2</td>
</tr>
<tr>
<td>AMT 121</td>
<td>Turbine Engine Theory and Maintenance</td>
<td>4</td>
</tr>
<tr>
<td>AMT 123</td>
<td>Ignition Systems</td>
<td>4</td>
</tr>
<tr>
<td>AMT 219</td>
<td>Turbine Engine Overhaul</td>
<td>4</td>
</tr>
</tbody>
</table>

### Fourth Term
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 117</td>
<td>Reciprocating Engine Theory and Maintenance</td>
<td>4</td>
</tr>
<tr>
<td>AMT 120</td>
<td>Propellers and Engine Installation</td>
<td>4</td>
</tr>
<tr>
<td>AMT 124</td>
<td>Fuel Metering Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

### Fifth Term
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 218</td>
<td>Powerplant Inspection</td>
<td>4</td>
</tr>
<tr>
<td>AMT 222</td>
<td>Reciprocating Engine Overhaul</td>
<td>4</td>
</tr>
<tr>
<td>AMT 225</td>
<td>AMT Practicum/Powerplant</td>
<td>2</td>
</tr>
</tbody>
</table>

### AVIATION SCIENCE

**Rock Creek Campus**  
Building 2, Room 230  
503-614-7256  
Southeast Center  
Mt. Scott Hall (MSH), Room 103  
503-788-6148  
[www.pcc.edu/flight](http://www.pcc.edu/flight)

**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**

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

**PREREQUISITES AND REQUIREMENTS**

Applicants must take the placement test administered through the campus assessment centers. Minimum test scores:

- Placement into MTH 60 or higher  
- Placement into WR 115 or higher

Attendance at an aviation science orientation or individual advising recommended prior to beginning the program. Please see [www.pcc.edu/flight](http://www.pcc.edu/flight) 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/flight](http://www.pcc.edu/flight) and click on “Getting Started” for details.

### AVIATION SCIENCE AIRPLANE AAS DEGREE

Minimum 90 credit hours. 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 Summary**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 70</td>
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<tr>
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<tr>
<td>WR 4</td>
<td>English Composition</td>
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<tr>
<td>GS 4</td>
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<td></td>
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<tr>
<td>Credit Total</td>
<td>90</td>
<td></td>
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</table>

**COURSE OF STUDY: FLIGHT INSTRUCTOR OPTION**

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

**First Term**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AVS 107</td>
<td>Flight Prep Lab Level I</td>
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</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>3</td>
</tr>
<tr>
<td>AVS 121</td>
<td>Airplane Pre-Solo Flight</td>
<td>1</td>
</tr>
<tr>
<td>AVS 122</td>
<td>Airplane Pre-Cross Country Flight</td>
<td>1</td>
</tr>
<tr>
<td>AVS 130</td>
<td>Instrument Ground School</td>
<td>4</td>
</tr>
<tr>
<td>AVS 135</td>
<td>Airplane: Instrument Flight</td>
<td>3</td>
</tr>
<tr>
<td>AVS 131</td>
<td>Airplane Instrument Attitude/Nav</td>
<td>1</td>
</tr>
<tr>
<td>AVS 132</td>
<td>Airplane Instrument Approaches</td>
<td>1</td>
</tr>
<tr>
<td>AVS 133</td>
<td>Airplane Instrument Cross-Country</td>
<td>1</td>
</tr>
<tr>
<td>AVS 137</td>
<td>Applied Aerodynamics</td>
<td>4</td>
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</table>

**Second Term**

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>AVS 107</td>
<td>Flight Prep Lab Level I</td>
<td>1</td>
</tr>
<tr>
<td>AVS 130</td>
<td>Instrument Ground School</td>
<td>4</td>
</tr>
<tr>
<td>AVS 135</td>
<td>Airplane: Instrument Flight</td>
<td>3</td>
</tr>
<tr>
<td>AVS 131</td>
<td>Airplane Instrument Attitude/Nav</td>
<td>1</td>
</tr>
<tr>
<td>AVS 132</td>
<td>Airplane Instrument Approaches</td>
<td>1</td>
</tr>
<tr>
<td>AVS 133</td>
<td>Airplane Instrument Cross-Country</td>
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<tr>
<td>AVS 137</td>
<td>Applied Aerodynamics</td>
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**Third Term**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>AVS 107</td>
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<tr>
<td>AVS 140</td>
<td>Airplane: Commercial Pilot Ground</td>
<td>4</td>
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<tr>
<td>AVS 145</td>
<td>Introduction to Commercial Airplane</td>
<td>3</td>
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<tr>
<td>AVS 141</td>
<td>Airplane Commercial XC/Night</td>
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<tr>
<td>AVS 142</td>
<td>Airplane XC Exploration</td>
<td>1</td>
</tr>
<tr>
<td>AVS 143</td>
<td>Airplane Commercial Precision XC</td>
<td>1</td>
</tr>
<tr>
<td>AVS 157</td>
<td>Aircraft Systems &amp; Structures I: Airframe</td>
<td>3</td>
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</table>
### Programs and Disciplines

**Fourth Term**

<table>
<thead>
<tr>
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<th>Course Name</th>
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<tbody>
<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
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<tr>
<td>AVS 225</td>
<td>Airplane: Commercial Flight&lt;sup&gt;4&lt;/sup&gt;</td>
<td>4</td>
</tr>
<tr>
<td>AVS 221</td>
<td>Airplane Complex Airplanes&lt;sup&gt;4&lt;/sup&gt;</td>
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</tr>
<tr>
<td>AVS 222</td>
<td>Airplane Commercial Maneuvers&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>AVS 223</td>
<td>Airplane Commercial Proficiency&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>AVS 224</td>
<td>Airplane Multi-Engine&lt;sup&gt;4&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>GS 109</td>
<td>Meteorology*</td>
<td>4</td>
</tr>
<tr>
<td></td>
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<td>4</td>
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</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 167</td>
<td>Aircraft Systems: Powerplant</td>
<td>3</td>
</tr>
<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 227</td>
<td>Aviation Careers</td>
<td>4</td>
</tr>
<tr>
<td>AVS 230</td>
<td>Airplane: Certified Flight Instructor Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 235</td>
<td>Airplane: Certified Flight Instructor Flight&lt;sup&gt;6&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>AVS 231</td>
<td>Airplane CFI Introduction&lt;sup&gt;5&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>AVS 232</td>
<td>Airplane CFI Test Prep&lt;sup&gt;5&lt;/sup&gt;</td>
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**Sixth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 241</td>
<td>Airplane: CFI Ground/Flight</td>
<td>3</td>
</tr>
<tr>
<td>AVS 242</td>
<td>Airplane: MEI Ground/Flight</td>
<td>2</td>
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<tr>
<td>AVS 267</td>
<td>Economics of Flight Operations</td>
<td>4</td>
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**Seventh Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 237</td>
<td>Aviation Law and Regulations</td>
<td>4</td>
</tr>
<tr>
<td>AVS 255</td>
<td>Airplane: Pilot Performance</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

<sup>1</sup>Students can take either AVS 125 or AVS 121, 122 and 123

<sup>2</sup>Students can take either AVS 135 or AVS 131, 132 and 133

<sup>3</sup>Students can take either AVS 145 or AVS 141, 142 and 143

<sup>4</sup>Students can take either AVS 225 or AVS 221, 222, 223 and 224

**AVIATION SCIENCE AIRPLANE AAS DEGREE**

**Aviation Science Airplane Degree Summary**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS</td>
<td>61</td>
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<tr>
<td>Remaining General Education</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Aviation Science Program Electives</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GS</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Total 90**

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

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 237</td>
<td>Aviation Law and Regulations</td>
<td>4</td>
</tr>
<tr>
<td>AVS 255</td>
<td>Airplane: Pilot Performance</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

Students can take either AVS 125 or AVS 121, 122 and 123

Students can take either AVS 135 or AVS 131, 132 and 133

Students can take either AVS 145 or AVS 141, 142 and 143

Students can take either AVS 225 or AVS 221, 222, 223 and 224

### AVIATION SCIENCE HELICOPTER AAS DEGREE

Minimum 90 credit hours. 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS</td>
<td>58</td>
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<tr>
<td>Aviation Science Program Electives</td>
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<tr>
<td>Remaining General Education</td>
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<td></td>
</tr>
<tr>
<td>PHY</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GS</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Credit Total 90

### COURSE OF STUDY WITH INSTRUMENT RATING

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>AVS 107</td>
<td>Flight Prep Level I</td>
<td>1</td>
</tr>
<tr>
<td>AVS 110</td>
<td>Helicopter: Private Pilot Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 115</td>
<td>Helicopter: Private Pilot Flight</td>
<td>3</td>
</tr>
<tr>
<td>AVS 111</td>
<td>Helicopter Pre-Solo</td>
<td>1</td>
</tr>
<tr>
<td>AVS 112</td>
<td>Helicopter Private Cross Country</td>
<td>1</td>
</tr>
<tr>
<td>AVS 113</td>
<td>Helicopter Private Proficiency</td>
<td>1</td>
</tr>
<tr>
<td>AVS 127</td>
<td>Introduction to Aviation</td>
<td>4</td>
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<tr>
<td></td>
<td>General Education</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>AVS 107</td>
<td>Flight Prep Level I</td>
<td>1</td>
</tr>
<tr>
<td>AVS 137</td>
<td>Applied Aerodynamics</td>
<td>4</td>
</tr>
<tr>
<td>AVS 150</td>
<td>Helicopter: Commercial Ground</td>
<td>3</td>
</tr>
<tr>
<td>AVS 155</td>
<td>Helicopter: Introduction to Commercial Flight 3</td>
<td>3</td>
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<tr>
<td>AVS 151</td>
<td>Helicopter Commercial XC</td>
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</tr>
<tr>
<td>AVS 152</td>
<td>Helicopter Introduction to Commercial Basics 2</td>
<td>1</td>
</tr>
<tr>
<td>AVS 153</td>
<td>Meteorology*</td>
<td>1</td>
</tr>
<tr>
<td>GS 109</td>
<td></td>
<td>4</td>
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</table>

### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AVS 107</td>
<td>Flight Prep Lab Level I</td>
<td>1</td>
</tr>
<tr>
<td>AVS 130</td>
<td>Instrument Ground School</td>
<td>4</td>
</tr>
<tr>
<td>AVS 157</td>
<td>Aircraft Systems &amp; Structures I: Airframe</td>
<td>3</td>
</tr>
<tr>
<td>AVS 207</td>
<td>Flight Prep Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 215</td>
<td>Helicopter: Commercial Flight-B</td>
<td>4</td>
</tr>
<tr>
<td>AVS 211</td>
<td>Helicopter Instrument Introduction</td>
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</tr>
<tr>
<td>AVS 212</td>
<td>Helicopter Instrument Procedures</td>
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</tr>
<tr>
<td>AVS 213</td>
<td>Helicopter Advanced Commercial</td>
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</tr>
<tr>
<td>AVS 214</td>
<td>Helicopter Commercial Test Prep</td>
<td>1</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>
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</tr>
</tbody>
</table>

### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 167</td>
<td>Aircraft Systems: Powerplant</td>
<td>3</td>
</tr>
<tr>
<td>AVS 207</td>
<td>Flight Prep Level II</td>
<td>1</td>
</tr>
<tr>
<td>AVS 227</td>
<td>Aviation Careers</td>
<td>4</td>
</tr>
<tr>
<td>AVS 260</td>
<td>Helicopter: CFI Ground</td>
<td>4</td>
</tr>
<tr>
<td>AVS 265</td>
<td>Helicopter: CFI Flight</td>
<td>3</td>
</tr>
<tr>
<td>AVS 261</td>
<td>Helicopter Introduction to CFI</td>
<td>1</td>
</tr>
<tr>
<td>AVS 262</td>
<td>Helicopter CFI Development</td>
<td>1</td>
</tr>
<tr>
<td>AVS 263</td>
<td>Helicopter CFI Test Prep</td>
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</table>

### Fifth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 237</td>
<td>Aviation Law and Regulations</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Aviation Science Program Electives</td>
<td>8</td>
</tr>
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</table>

### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 267</td>
<td>Economics of Flight Operations</td>
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<tr>
<td></td>
<td>Aviation Science Program Electives</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

Students can take either AVS 115 or AVS 111, 112 and 113

Students can take either AVS 155 or AVS 151, 152 and 153

Students can take either AVS 215 or AVS 211, 212, 213 and 214

Students can take either AVS 265 or AVS 261, 262 and 263

### AVIATION SCIENCE HELICOPTER AAS DEGREE

Minimum 90 credit hours. 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 assistance in course planning.

### Aviation Science Helicopter Degree Credit Summary

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS</td>
<td>53</td>
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<tr>
<td>Aviation Science Program Electives</td>
<td>21</td>
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<td>PHY</td>
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<td></td>
</tr>
<tr>
<td>GS</td>
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<td></td>
</tr>
</tbody>
</table>

Credit Total 90
COURSE OF STUDY-WITHOUT INSTRUMENT RATING

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 Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Term</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVS 107</td>
<td>Flight Prep Lab Level I</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AVS 110</td>
<td>Helicopter: Private Pilot Ground</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>AVS 115</td>
<td>Helicopter: Private Pilot Flight¹</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVS 111</td>
<td>Helicopter Pre-Solo¹</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AVS 112</td>
<td>Helicopter Private Cross Country¹</td>
<td>1</td>
<td></td>
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<tr>
<td>AVS 113</td>
<td>Helicopter Private Proficiency¹</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AVS 127</td>
<td>Introduction to Aviation</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>General Education</td>
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<td>4</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>AVS 107</td>
<td>Flight Level I</td>
<td>1</td>
<td></td>
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<tr>
<td>AVS 137</td>
<td>Applied Aerodynamics</td>
<td>4</td>
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</tr>
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<td>AVS 150</td>
<td>Helicopter: Commercial Ground</td>
<td>3</td>
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<tr>
<td>AVS 155</td>
<td>Helicopter: Intro to Commercial Flight²</td>
<td>3</td>
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<tr>
<td>AVS 151</td>
<td>Helicopter Commercial XC²</td>
<td>1</td>
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<tr>
<td>AVS 152</td>
<td>Helicopter Intro to Commercial Basics</td>
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<tr>
<td>AVS 153</td>
<td>Helicopter Commercial Basic Practice²</td>
<td>1</td>
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<tr>
<td>GS 109</td>
<td>Meteorology*</td>
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<tr>
<td><strong>Third Term</strong></td>
<td></td>
<td></td>
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<tr>
<td>AVS 157</td>
<td>Aircraft Systems &amp; Structures I: Airframe</td>
<td>3</td>
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<tr>
<td>AVS 205</td>
<td>Helicopter: Commercial Flight</td>
<td>3</td>
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<tr>
<td>AVS 211</td>
<td>Helicopter Instrument Introduction²</td>
<td>3</td>
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<tr>
<td>AVS 213</td>
<td>Helicopter Advanced Commercial³</td>
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<tr>
<td>AVS 214</td>
<td>Helicopter Commercial Test Prep²</td>
<td>3</td>
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<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
<td>1</td>
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<tr>
<td>Aviation Science Program Electives</td>
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<td></td>
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<tr>
<td>PHY 101</td>
<td>Fundamentals of Physics I*</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHY 201</td>
<td>General Physics*</td>
<td>4</td>
<td></td>
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<tr>
<td><strong>Fourth Term</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVS 167</td>
<td>Aircraft Systems: Powerplant</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>AVS 207</td>
<td>Flight Prep Lab Level II</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AVS 227</td>
<td>Aviation Careers</td>
<td>4</td>
<td></td>
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<tr>
<td>AVS 260</td>
<td>Helicopter: CFI Ground</td>
<td>4</td>
<td></td>
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<tr>
<td>AVS 265</td>
<td>Helicopter: CFI Flight</td>
<td>3</td>
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<tr>
<td>AVS 261</td>
<td>Helicopter Intro to CFI¹</td>
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<tr>
<td>AVS 262</td>
<td>Helicopter CFI Development</td>
<td>1</td>
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<tr>
<td>AVS 263</td>
<td>Helicopter CFI Test Prep¹</td>
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<td><strong>Fifth Term</strong></td>
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<td></td>
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</tr>
<tr>
<td>AVS 237</td>
<td>Aviation Law and Regulations</td>
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</tr>
</tbody>
</table>

Note: Other electives applicable to an aviation career may be approved on a case by case basis. In order to meet the credit minimum for the degree requirements, some courses may count toward Electives or General Education, but not both.

BIOLOGY

Cascade Campus
Jackson Hall (JH), Room 210
503-978-5209

Rock Creek Campus
Building 7, Room 202
503-614-7257

Sylvania Campus
Health Technology (HT), Room 305
503-977-4225

www.pcc.edu/pcc/pro/progs/bit/

DESCRIPTION

At PCC, Biology course offerings include biology classes for those interested in introductory topics, environmental habitats, anatomy and physiology, microbiology, and a wide variety of other science majors’ classes.

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 systems. See the Course Description (BI) section of this catalog for individual Biology courses and course prerequisites.
BIOMEDICAL ENGINEERING TECHNOLOGY

SEE ELECTRONIC ENGINEERING TECHNOLOGY

BIOSCIENCE TECHNOLOGY

Rock Creek Campus
Science and Technology, Building 7/202
503-614-7257 or 614-7282

CAREER AND PROGRAM DESCRIPTION

Bioscience Technology refers to the research and development 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 are cutting-edge and 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 Biotechnician 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 specify 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. The AAS in Bioscience Technology also allows for a smooth transfer to Portland State University toward a bachelor’s degree in Biology.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Bioscience Technology

Less than One-Year Certificate: Career Pathway
Biotechnician

PREREQUISITES AND REQUIREMENTS

AAS Bioscience Technology:
Placement into WR 121 and MTH 95

Biotechnician Certificate:
Placement into WR115, RD 115 and MTH 65

The Bioscience Technology program is a restricted entry program with limited enrollment. Contact the department for instructions.

BIOSCIENCE 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.

Bioscience Technology AAS Degree Credit Summary

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioscience Tech Core Courses</td>
<td>34</td>
</tr>
<tr>
<td>Bioscience Degree Electives</td>
<td>30</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>9</td>
</tr>
<tr>
<td>Basic Science Electives</td>
<td>9</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
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<tr>
<td><strong>Credit Total</strong></td>
<td><strong>90</strong></td>
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</table>

Bioscience Technology Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 112</td>
<td>Cell Biology for Health Occupations</td>
<td>5</td>
</tr>
<tr>
<td>BIT 101</td>
<td>Introduction to Bioscience Technology</td>
<td>4</td>
</tr>
<tr>
<td>BIT 105</td>
<td>Bioscience Workplace Safety</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 Lab 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 181</td>
<td>Exploring Bioscience</td>
<td>2</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
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<tr>
<td>CH 104</td>
<td>General Chemistry**</td>
<td>5</td>
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<tr>
<td>WR 121</td>
<td>English Composition</td>
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</table>

*Could be used as General Education

Basic Science Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BI 211</td>
<td>Principles of Biology*</td>
<td>5</td>
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<tr>
<td>BI 212</td>
<td>Principles of Biology*</td>
<td>5</td>
</tr>
<tr>
<td>BI 213</td>
<td>Principles of Biology*</td>
<td>5</td>
</tr>
<tr>
<td>BI 234</td>
<td>Microbiology*</td>
<td>5</td>
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<tr>
<td>CH 211</td>
<td>Introduction to Biochemistry*</td>
<td>4</td>
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<tr>
<td>CH 221</td>
<td>General Chemistry*</td>
<td>5</td>
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<tr>
<td>CH 222</td>
<td>General Chemistry*</td>
<td>5</td>
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<tr>
<td>CH 223</td>
<td>General Chemistry*</td>
<td>5</td>
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<tr>
<td>MTH 243</td>
<td>Statistics I*</td>
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<tr>
<td>PHY 201</td>
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<td>PHY 202</td>
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<tr>
<td>PHY 203</td>
<td>General Physics*</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

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 junior status.

Bioscience Technology Degree Electives- (20 must be BIT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</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>5</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>
</tbody>
</table>

*Could be used as General Education

Portland Community College • 2010–2011 39
Programs and Disciplines

BIOTECHNICIAN: CAREER PATHWAY CERTIFICATE
Minimum 13 credits. Students must also meet certificate requirements. The Biotechnician certificate is a Career Pathway. All courses within the certificate are contained in the Bioscience Technology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIT 110</td>
<td>Bioscience Technology Basics or</td>
<td>9</td>
</tr>
<tr>
<td>BIT 110A</td>
<td>Bioscience Technology Basics Part I</td>
<td>4.5</td>
</tr>
<tr>
<td>BIT 110B</td>
<td>Bioscience Technology Basics Part II</td>
<td>4.5</td>
</tr>
<tr>
<td>BIT 125</td>
<td>Quality Systems in Bioscience</td>
<td>2</td>
</tr>
<tr>
<td>BIT 181</td>
<td>Exploring Bioscience</td>
<td>2</td>
</tr>
</tbody>
</table>

** May substitute BIT 105, 107 and 109 for BIT 110

BUILDING CONSTRUCTION TECHNOLOGY
Rock Creek Campus
Building 7, Room 202
503-614-7255—General Information
503-614-7405—Design/Build Remodeling
503-614-7403 or 503-614-7328—Building Construction
503-614-7475—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 worksite, in Tool Safety, Residential Concrete, Floor/Wall/Roof Framing, Exterior/Interior Finish, Cabinetmaking, and Remodeling. Classroom instruction consists of lectures and exercises that will teach skills in Residential Print-reading, 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 jobsite 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. Students completing the BCT CM option can transfer their credits to the Oregon Institute of Technology (OIT) and apply their credits toward a Bachelor’s degree in Operations Management at the OIT Southeast Portland campus. See program advisor for details.

PREREQUISITES AND REQUIREMENTS
Prerequisites and requirements for this program are degree and certificate specific. See individual degree and certificate for prerequisite and requirement details.

Students new to the Building Construction Technology Program must take the college’s placement tests for math and writing.
administered through the assessment centers prior to program advising and registration. Students must be enrolled in or have completed MTH 20 or have placed into MTH 60 or above on the Numerical Test and have enrolled in or completed WR 90 or placed into WR 115 or above. Students must complete BCT 106 Hand and Power Tool Use and Safety with a C or better or acquire department approval before enrolling in classes requiring the use of hand or power tools. Students must have completed CAS 133, or a similar course, or have basic computer skills. Keyboarding skills are also recommended.

DEGREES AND CERTIFICATES OFFERED:

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

Less than One-Year Certificate
Building Construction Technology

BUILDING CONSTRUCTION TECHNOLOGY AAS DEGREE
Minimum 93 credit hours. 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
BCT 102 Residential Printreading 3
BCT 103 Residential Materials and Methods 3
BCT 104 Construction Mathematics 3
BCT 106 Hand Tool/Power Tool Use & Safety 3
General Education 4

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
BCT 102 Residential Printreading 3
BCT 103 Residential Materials and Methods 3
BCT 104 Construction Mathematics 3
BCT 106 Hand Tool/Power Tool Use & Safety 3
General Education 4

Second Term
ARCH 110 Introduction to Architectural Drawing 2
ARCH 132 Residential Building Codes 2
BCT 101 Principles of Construction Surveying 3
BCT 127 Residential Concrete 6
General Education 4

Third Term
BCT 120 Floor Framing 3
BCT 121 Wall Framing 3
BCT 122 Roof Framing I 3
BCT 123 Roof Framing II 3

Fourth Term
BCT 128 Exterior Finish 6
BCT Degree Electives 3
BCT 223 Finished Stair Construction 3
SP 215 Small Group Communication: Process and Theory 4

Fifth Term
BCT 203 Interior Finish 6
BCT 219 Cabinetmaking I 6
General Education 4

Sixth Term
BCT 204B Construction Estimating-Residential 3
BCT 206 Sustainable Construction Practices 3
BCT 211 Remodeling 6
WR 227 Technical and Professional Writing I 4

*Could be used as General Education

Building Construction Technology Degree Electives
BCT 100 Overview to the Construction Industry 3
BCT 105 Vectorworks for Constructors 3
BCT 108 Introduction to Building Science-Energy Efficient Housing 3
BCT 115 Introduction to Residential Greenroofing 1
BCT 116 Alternative Building Design 3
BCT 129 Mechanical Systems for Kitchens and Baths 4
BCT 130 Construction Safety 3
BCT 132 Computer Applications for Construction 3
BCT 133 Commercial Materials and Methods 3
BCT 134 Construction Scheduling 3
BCT 150 Mechanical, Electrical and Plumbing 3
BCT 202 Business Principles for Construction 3
BCT 204C Construction Estimating-Commercial 3
BCT 206 Sustainable Construction Practices 3
BCT 213 Commercial Printreading 3
BCT 214 Advanced Construction Estimating 3
BCT 216 Cabinetray I 2
BCT 217 Cabinetray II 2
BCT 218 Woodworking Projects 2
BCT 220 Cabinetmaking II 6
BCT 221 Construction Law for the Contractor 3
BCT 222 Engineering for Constructors 3
BCT 223 Finished Stair Construction 3
BCT 225 Construction Project Management 3
BCT 226 Finish Carpentry 2
BCT 229 Introduction to Kitchens and Baths 2
BCT 244 Kitchen and Bath Cabinet Installation 2
BCT 280A CE: Building Construction varied
BCT 280C CE: BCT Design/Build Remodeling varied

DESIGN/BUILD REMODELING AAS DEGREE
Minimum 107 credit hours. 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.

Design/Build Remodeling Degree Credit Summary
BCT 71
Remaining General Education 12
ID 10
ARCH 7
SP 4
BA 3

Credit Total 107
### 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  
- **BCT 102** Residential Printreading 3  
- **BCT 103** Residential Materials & Methods 3  
- **BCT 104** Construction Mathematics 3  
- **BCT 106** Hand Tool/Power Tool Use & Safety 3

#### Second Term
- **ARCH 110** Introduction to Architectural Drawing 2  
- **ARCH 126** Introduction to AutoCAD 3  
- **ARCH 132** Residential Building Codes 2  
- **BCT 134** Construction Scheduling\(^2\) 3  
- **BCT 202** Business Principles for Construction 3

#### Third Term
- **ARCH 133** Commercial Building Codes 2  
- **ARCH 136** Intermediate AutoCAD 3  
- **BCT 133** Commercial Materials and Methods 3  
- **BCT 221** Construction Law 3  
- **SP 215** Small Group Communication: Process and Theory\(^*\) 4

#### Fourth Term
- **BCT 150** Mechanical, Electrical and Plumbing 3  
- **BCT 213** Commercial Printreading\(^3\) 3  
- **CAS 170** Beginning Excel\(^5\) 3  
- **CG 209** Job Finding Skills 1  
- **WR 227** Technical and Professional Writing I 4

#### Fifth Term
- **BCT 101** Principals of Construction Surveying 3  
- **BCT 204C** Construction Estimating Commercial 3  
- **BCT 206** Sustainable Construction Practices 3  
- **BCT 207** Construction Job Costing 3  
- **General Education** 4

#### Sixth Term
- **BA 238** Sales 3  
- **BCT 204B** Construction Estimating-Residential 3  
- **BCT 211** Remodeling 6  
- **BCT 244** Kitchen & Bath Cabinet Installation 2  
- **ID 225** CAD for Kitchen & Bath Design 1  
- **ID 238** Advanced Kitchen & Bath Planning 3

*Could be used as General Education

#### CONSTRUCTION MANAGEMENT AAS DEGREE
Minimum 93 credit hours. 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.

**Construction Management Degree Credit Summary**
- **BCT** 54  
- Remaining General Education 12  
- **ARCH** 12  
- **SP** 4  
- **WR** 4  
- **CAS** 3  
- Cooperative Education 3  
- **CG** 1

*Credit Total 93

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1. 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.
2. Class may be challenged by petitioning for course by examination.
3. **ARCH 162 Blueprint Reading Part 1** may be substituted for BCT 213
4. **ARCH 122 Structural Systems Part 2** may be substituted for BCT 222
5. **CAS 171 Intermediate Excel** may be substituted for **CAS 170**

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

#### First Term
- **BCT 100** Overview of the Construction Industry 3  
- **BCT 102** Residential Printreading\(^*\) 3  
- **BCT 103** Residential Materials & Methods\(^2\) 3  
- **BCT 104** Construction Mathematics\(^2\) 3  
- **General Education** 4

#### Second Term
- **ARCH 110** Introduction to Architectural Drawing 2  
- **ARCH 126** Introduction to AutoCAD 3  
- **ARCH 132** Residential Building Codes 2  
- **BCT 134** Construction Scheduling\(^2\) 3  
- **BCT 202** Business Principles for Construction 3

#### Third Term
- **ARCH 133** Commercial Building Codes 2  
- **ARCH 136** Intermediate AutoCAD 3  
- **BCT 133** Commercial Materials and Methods 3  
- **BCT 221** Construction Law 3  
- **SP 215** Small Group Communication: Process and Theory\(^*\) 4

#### Fourth Term
- **BCT 150** Mechanical, Electrical and Plumbing 3  
- **BCT 213** Commercial Printreading\(^3\) 3  
- **CAS 170** Beginning Excel\(^5\) 3  
- **CG 209** Job Finding Skills 1  
- **WR 227** Technical and Professional Writing I 4

#### Fifth Term
- **BCT 101** Principals of Construction Surveying 3  
- **BCT 204C** Construction Estimating Commercial 3  
- **BCT 206** Sustainable Construction Practices 3  
- **BCT 207** Construction Job Costing 3  
- **General Education** 4

#### Sixth Term
- **BCT 130** Construction Safety 3  
- **BCT 214** Advanced Construction Estimating 3  
- **BCT 222** Engineering for Constructors\(^4\) 3  
- **BCT 225** Construction Project Management 3  
- **General Education** 4

#### Seventh Term
- **BCT 280A** CE: Building Construction\(^1\) 3

*Could be used as General Education

1. 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.
2. Class may be challenged by petitioning for course by examination.
3. **ARCH 162 Blueprint Reading Part 1** may be substituted for **BCT 213**
4. **ARCH 122 Structural Systems Part 2** may be substituted for **BCT 222**
5. **CAS 171 Intermediate Excel** may be substituted for **CAS 170**

### BUILDING CONSTRUCTION TECHNOLOGY CERTIFICATE
Minimum 37 credit hours. Students must meet all certificate requirements. The Building Construction Technology Certificate is a related certificate. All courses within the certificate are in the Building Construction Technology AAS Degree.
Building Construction Technology Certificate
Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT</td>
<td>33</td>
</tr>
<tr>
<td>ARCH</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>37</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>BCT 102</td>
<td>Residential Printreading 3</td>
</tr>
<tr>
<td>BCT 103</td>
<td>Residential Materials and Methods 3</td>
</tr>
<tr>
<td>BCT 104</td>
<td>Construction Mathematics 3</td>
</tr>
<tr>
<td>BCT 106</td>
<td>Hand Tool/Power Tool Use &amp; Safety 3</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing 2</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>Residential Building Codes 2</td>
</tr>
<tr>
<td>BCT 101</td>
<td>Principles of Construction Surveying 3</td>
</tr>
<tr>
<td>BCT 127</td>
<td>Residential Concrete 6</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BCT 120</td>
<td>Floor Framing 3</td>
</tr>
<tr>
<td>BCT 121</td>
<td>Wall Framing 3</td>
</tr>
<tr>
<td>BCT 122</td>
<td>Roof Framing I 3</td>
</tr>
<tr>
<td>BCT 123</td>
<td>Roof Framing II 3</td>
</tr>
</tbody>
</table>

BUILDING INSPECTION TECHNOLOGY

Sylvania Campus
Science Technology Building (ST), Room 208
503-977-4163
www.pcc.edu/programs/bldg-inspection/

CAREER AND PROGRAM DESCRIPTION

This program is designed to help students develop technical and other skills needed to be successful in building inspections technology. Plans examiners review new and remodel construction drawings submitted for building code compliance before a permit is issued. Building inspectors check construction sites work for compliance to the permitted plans and applicable code and standards. As an inspector and/or plans examiner you identify, interpret and administer state and local codes; effectively communicate and interact with the public and design professionals; and conduct plan reviews and inspections to protect the safety of the public.

The Building Inspection Technology 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 institutions. A C or better is required for program courses except for CG 209 and INSP 280B that use a grade of P. Students may start any term but may be limited in class selection.

DEGREES AND CERTIFICATES OFFERED

The AAS degree in Building Inspection Technology and the Commercial Structural and Mechanical Inspection Certificate have been suspended for the 2010-2011 academic year. Please contact the department for more information.

Less than One-Year Certificate

Residential Structural and Mechanical Inspection and Plans Examination

PREREQUISITES AND REQUIREMENTS

The Residential Structural and Mechanical Inspection and Plans Examination Certificate prepares students with several years of experience in all aspects of construction for entry level employment as a building inspector or plans examiner, and the national certification exams offered by the International Code Council and the Oregon Inspector Certification tests. Check with the State Building Codes Agency or your advisor for specific requirements to meet eligibility to be employed in the State of Oregon. The certificate is intended mainly for evening students with extensive construction background. Programs are designed to begin fall term. INSP 280B Cooperative Education (work experience) is available only during the day, Monday through Friday. Courses may be offered evenings, days, online, or weekends. To enter, students must have taken INSP 100, MTH 20 and WR 115 or higher level math and writing courses.

RESIDENTIAL STRUCTURAL AND MECHANICAL INSPECTION AND PLANS EXAMINATION CERTIFICATE

Minimum 43 credit hours. Students must meet certificate requirements.

Residential Structural and Mechanical Inspection and Plans Examination Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>12</td>
</tr>
<tr>
<td>INSPIR</td>
<td>11</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>10</td>
</tr>
<tr>
<td>Residential Structural and Mechanical Elective</td>
<td>6</td>
</tr>
<tr>
<td>CAS</td>
<td>3</td>
</tr>
<tr>
<td>CG</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>43</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 121</td>
<td>Structural Systems I 2</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>Blueprint Reading Part I 2</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word 3</td>
</tr>
<tr>
<td>INSPIR 151</td>
<td>International Residential Code-Structural 4</td>
</tr>
<tr>
<td>INSPIR 154</td>
<td>Residential Inspection Basics 1</td>
</tr>
<tr>
<td>Residential Structural Communication Elective 3</td>
<td></td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 122</td>
<td>Structural Systems II 4</td>
</tr>
<tr>
<td>CG 209</td>
<td>Job Finding Skills 1</td>
</tr>
<tr>
<td>INSPIR 152</td>
<td>International Residential Code-Mechanical 2</td>
</tr>
<tr>
<td>INSPIR 280B</td>
<td>CE: Field Experience 4</td>
</tr>
<tr>
<td>Residential Structural Communication Elective 3</td>
<td></td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 123</td>
<td>Structural Systems III 4</td>
</tr>
<tr>
<td>INSPIR 202</td>
<td>Plans Exam-Residential 4</td>
</tr>
<tr>
<td>INSPIR 280B</td>
<td>CE: Field Experience 6</td>
</tr>
</tbody>
</table>

Note: CE: Field Experience totals a minimum of 300 hours. See prerequisites for each course.
### Residential Structural Communication Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 105</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>MSD 110</td>
<td>Gender Conflict Resolution</td>
<td>1</td>
</tr>
<tr>
<td>MSD 119A</td>
<td>Intercultural Communication</td>
<td>1</td>
</tr>
<tr>
<td>MSD 130</td>
<td>Creative Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MSD 150</td>
<td>Listening Skills</td>
<td>1</td>
</tr>
<tr>
<td>MSD 151</td>
<td>Dealing with Difficult People</td>
<td>1</td>
</tr>
<tr>
<td>MSD 157</td>
<td>Conflict Management</td>
<td>1</td>
</tr>
<tr>
<td>MSD 160A</td>
<td>Communicate Styles</td>
<td>1</td>
</tr>
<tr>
<td>MSD 176</td>
<td>Nonverbal Communication</td>
<td>1</td>
</tr>
<tr>
<td>SP 100</td>
<td>Introduction to Speech Communication</td>
<td>4</td>
</tr>
<tr>
<td>SP 215</td>
<td>Small Group Communication: Process and Theory</td>
<td>4</td>
</tr>
</tbody>
</table>

### BUSINESS ADMINISTRATION

 Cascade Campus  
 Technology Education Building (TEB), Room 210  
 503-978-5317

 Rock Creek Campus  
 Building 3, Room 201  
 503-614-7235

 Sylvania Campus  
 TCB Room 312  
 503-977-4292

 Extended Learning Campus  
 Southeast Center  
 Mt. Scott Hall (MSH), Room 103  
 503-788-6146

 [www.pcc.edu/programs/business/](http://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.htm](http://www.wafc.com/links/groceryretailers.htm).

College entry-level competencies in English and in computational 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 Science Oregon Transfer Degree in Business

#### Associate of Applied Science Degree

- Accounting
- Marketing
- Management
- Retail Management

#### One-Year Certificate

- Accounting Clerk

#### Less than One-Year Certificate

- Accelerated Accounting
- Marketing
- Retail Management

#### Less than One-Year Certificate: Career Pathway

- Retail Management: Retail Sales and Service
- Accounting: Entry Level Accounting Clerk

### ACCOUNTING AAS DEGREE

Minimum 91 credit hours. 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>Component</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting Degree Core Courses</td>
<td>72</td>
</tr>
<tr>
<td>Business Program Electives</td>
<td>11</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
</tr>
</tbody>
</table>

#### Accounting Degree Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>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(^1)</td>
<td>3</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 177</td>
<td>Payroll 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 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>
</tr>
<tr>
<td>BA 213</td>
<td>Principles of Accounting III</td>
<td>3</td>
</tr>
<tr>
<td>BA 222</td>
<td>Financial 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 240</td>
<td>Nonprofit Financial Management and Accounting</td>
<td>4</td>
</tr>
<tr>
<td>or BA 242</td>
<td>Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA 256</td>
<td>Income Tax</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
</tbody>
</table>
**Accounting Clerk Economic Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 200</td>
<td>Introduction to Economics</td>
<td>4</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics*</td>
<td>4</td>
</tr>
<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics*</td>
<td>4</td>
</tr>
</tbody>
</table>

*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.

**Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Program Electives</td>
<td>Business Program Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Accelerated Accounting Certificate**

Minimum 29 credit hours. Students must all meet certificate requirements.

**Accelerated Accounting Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Program Electives</td>
<td>Business Program Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Program Electives</td>
<td>Business Program Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

*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.

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

*Students working toward the Accelerated 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 credit hours. Students must also meet certificate requirements. The Entry-Level Accounting Clerk Certificate is a Career Pathway. All courses within the certificate are contained in the Accounting AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>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 228</td>
<td>Computer Accounting Applications</td>
<td>3</td>
</tr>
</tbody>
</table>

MANAGEMENT AAS DEGREE
Minimum 91 credit hours. 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
- Management Core Courses: 55
- Management Degree Electives: 15
- Remaining General Education: 12
- Management Support Electives: 9

Credit Total: 91

Management Degree Core Courses
- BA 101 Introduction to Business: 4
- BA 111 Introduction to Accounting: 3
- BA 131 Computers in Business: 4
- BA 205 Solving Communication Problems with Technology: 4
- BA 206 Management Fundamentals: 3
- BA 211 Principles of Accounting I: 3
- BA 212 Principles of Accounting II: 3
- BA 223 Principles of Marketing: 3
- BA 224 Human Resource Management: 3
- BA 226 Business Law I: 4
- BA 285 Human Relations in Organizations: 3
- CAS 121 Beginning Keyboarding: 3
- CAS 122 Keyboarding for Speed and Accuracy: 3
- CAS 170 Beginning Excel: 3
- CAS 171 Intermediate Excel: 3
- CAS 216 Beginning Word: 3
- CAS 217 Intermediate Word: 3
- EC 201 Principles of Economics: Microeconomics*: 4
- EC 202 Principles of Economics: Macroeconomics*: 4
- OS 131 10-Key on Calculators: 1
- WR 121 English Composition: 4

*Could be used as General Education

Electives and Remaining General Education
- Management Support Electives: 9
- Management Degree Electives: 15
- Remaining General Education: 12

MARKETING AAS DEGREE
Minimum 91 credit hours. 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
- Marketing Degree Core Courses: 67
- Business Program Electives: 13
- Remaining General Education: 8
- CAS or Cooperative Education: 3

Credit Total: 91

Marketing Degree Core Courses
- BA 101 Introduction to Business: 4
- BA 111 Introduction to Accounting*: 3
- BA 131 Computers in Business: 4
- BA 203 Introduction to International Business: 3
- BA 205 Solving Communication Problems with Technology: 4
- BA 211 Principles of Accounting I: 3
- BA 223 Principles of Marketing: 3
- BA 226 Business Law I: 4
- BA 234 International Marketing*: 3
- BA 238 Sales: 3
- BA 239 Advertising: 3
- BA 249 Principles of Retailing & E-tailing: 3
- BA 250 Small Business Management: 3
- BA 285 Human Relations - Organizations: 3
- BA 280A/BA 280B: 3

*Could be used as General Education

**Course details and requirements may vary. Students should consult with program advisors for course planning.
Electives and Remaining General Education

Business Program Electives 13
Remaining General Education 8

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 electives are listed at the end of the business administration section.

2 Students who can touch type should substitute a Business elective.

3 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.

4 Choose from CAS 111D, CAS 111F, CAS 140, CAS 171, or CAS 231.

5 May substitute Business elective.

MARKETING CERTIFICATE

Minimum 44 credit hours. Students must also meet certificate requirements. The Marketing Certificate is a related certificate. All courses within the certificate are in the Marketing AAS Degree.

Marketing Certificate Credit Summary
Marketing Core Courses 34
Business Program Electives 6
Cooperative Education 4

Credit Total 44

Marketing Certificate Core Courses
BA 101 Introduction to Business 4
BA 111 Introduction to Accounting 3
BA 131 Computers in Business 4
BA 223 Principles of Marketing 3
BA 238 Sales 3
BA 239 Advertising 3
BA 249 Principles of Retailing and E-tailing 3
BA 285 Human Relations - Organizations 3
CAS 121A Beginning Keyboarding 1
CAS 216 Beginning Word 3
WR 121 English Composition 4

Retail Management AAS Degree

Retail Management Core Courses 74
Business Program Electives 10
Remaining General Education 8
Cooperative Education 2

Credit Total 94

Electives, Cooperative Education and Remaining General Education

BA 280A CE: Business Experience 2
Remaining General Education 8
Business Program Electives 10

1 Students working toward the Retail Management Degree must complete business electives selected from list of Business Program Electives which appears at the end of the program description in this section.

2 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 CERTIFICATE

Minimum 34 credit hours. Students must also meet certificates requirements. The Retail Management Certificate is a related certificate. All courses within the certificate are contained in the Retail Management AAS Degree.

Retail Management Certificate Credit Summary
Retail Mgmt Cert Core Courses 34

Credit Total 34

Retail Management Certificate Core Courses
BA 131 Computers in Business 4
CIS 120 Computer Concepts I 4
BA 205 Solving Communication Problems with Technology 4
BA 206 Management Fundamentals 3
BA 211 Principles of Accounting I 3
BA 223 Principles of Marketing 3
BA 224 Human Resource Management 3
BA 249 Principles of Retailing and E-tailing 3
BA 285 Human Relations - Organizations 3
MTH 30 Business Math (or MTH 60 or higher) 4
SP 111 Public Speaking 4
RETAIL SALES AND SERVICE: CAREER PATHWAY CERTIFICATE

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

<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 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing &amp; E-tailing</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
</tbody>
</table>

Business Program Electives

These business electives apply to all business administration degrees and certificates that have Business Program Electives identified in the curriculum.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 141</td>
<td>Introduction to International Business Law</td>
<td>3</td>
</tr>
<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 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 207</td>
<td>Introduction to E-Commerce</td>
<td>4</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>
</tr>
<tr>
<td>BA 213</td>
<td>Principles of Accounting III</td>
<td>3</td>
</tr>
<tr>
<td>BA 215</td>
<td>Basic Cost Accounting</td>
<td>3</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>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 227</td>
<td>Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</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>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 240</td>
<td>Nonprofit Financial Mgmt and Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 242</td>
<td>Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-Tailing</td>
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INTERNATIONAL BUSINESS PROGRAM AWARD

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 credit hours; includes 15 credit hours of required courses and 15 credit hours 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

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<tr>
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<td>BA 203</td>
<td>Introduction to International Business</td>
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<tr>
<td>BA 234</td>
<td>International Marketing</td>
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<td>BA 237</td>
<td>Fundamentals of Import/Export</td>
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<td>Contemporary World Economic Issues:</td>
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<td>PS 205</td>
<td>Global Politics: Conflict &amp; Cooperation</td>
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International Business Electives

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<td>Geography of the Developed World</td>
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<td>Geography of the Developing World</td>
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<td>HST 103</td>
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</table>
HST 104 History of Eastern Civilizations: Middle East 4
HST 105 History of Eastern Civilizations: India and Subcontinent 4
HST 106 History of Eastern Civilizations: East Asia 4
HST 278 Russian History I 4
PHL 202 Introduction to Philosophy: Elementary Ethics 4
PS 220 U.S. Foreign Policy 4
WR 121 English Composition 4
Any modern language including English for Speakers of Other Languages (limited to nine credit hours)

CHEMISTRY
Cascade Campus
Jackson Hall (JH), Room 210
503-987-5209
Rock Creek Campus
Building 7, Room 202
503-614-7500
Sylvania Campus
Science Technology (ST), Room 312
503-977-4174

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
503-614-7235

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.

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 a counselor for additional information and guidance. See the Course Description (CHLA prefix) section of this catalog for individual courses and course prerequisites.
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

PREREQUISITE 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.
CIVIL ENGINEERING TECHNOLOGY
AAS DEGREE

Minimum 101 credit hours. 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

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<tr>
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<tr>
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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>CMET 112</td>
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Second Term

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<td>CMET 122</td>
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<td>CMET 123</td>
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Third Term

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Fourth Term

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<td>CMET 133</td>
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<tr>
<td>CMET 221</td>
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<td>CMET 213</td>
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<td>SP 100</td>
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Fifth Term

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Sixth Term

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<td>CMET 223</td>
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<tr>
<td>CMET 236</td>
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</table>

GREEN TECHNOLOGY AND SUSTAINABILITY
AAS DEGREE

Minimum 108 credit hours. 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>
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<th>Course</th>
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Green Tech and Sustainability Core Courses

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<td>CMET 111</td>
<td>Engineering Tech Orientation 4</td>
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<td>CMET 112</td>
<td>Technical Algebra/Trigonometry 4</td>
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<td>CMET 113</td>
<td>Engineering Technology Graphics 3</td>
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<td>CMET 121</td>
<td>Strength of Materials 4</td>
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<td>Technical Engineering Physics 4</td>
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<td>CMET 123</td>
<td>Basic Algebra with Analytic Geometry 4</td>
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<td>Applied Calculus 8</td>
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<td>Plane Surveying 3</td>
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<td>CMET 228</td>
<td>Construction Materials 3</td>
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*Could be used as General Education

Remaining General Education and Cooperative Education

<table>
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*Could be used as General Education
CIVIL ENGINEERING TECHNOLOGY CERTIFICATE
Minimum 67 credit hours. Students must also meet certificate requirements. The Civil Engineering Technology Certificate is a related certificate. All courses within the certificate are contained in the Civil Engineering Technology AAS Degree.

Civil Engineering Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 50</td>
<td>5</td>
</tr>
<tr>
<td>CH</td>
<td>4</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>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>67</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
- 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 General Chemistry 5

Third Term
- CMET 131 Applied Calculus 8
- CMET 227 Applied Electricity Fundamentals 2
- WR 121 English Composition 4
- General Education (Social Science) 4

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

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 CERTIFICATE
Minimum 42 credit hours. Students must meet certificate requirements.

Computer Aided Design and Drafting Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRF</td>
<td>42</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>42</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
- DRF 100 Drafting Orientation 3
- DRF 117 Drafting Fundamentals 4
- DRF 126 Introduction to AutoCAD 3
- DRF 136 Intermediate AutoCAD 3

Second Term
- DRF 133 Intermediate Drafting 4
- DRF 185 AutoCAD Inventor Fundamentals 3
- DRF 246 AutoCAD 3-D: Solid Modeling 3
- DRF 270 SolidWorks Fundamentals 3

Third Term
- DRF 135 Advanced Drafting 4
- DRF 251 Kinematics Drafting 3
- DRF 256 Advanced AutoCAD 3
- DRF 271 SolidWorks Advanced 3
- DRF 285 AutoCAD Inventor Advanced 3

COMPUTER AIDED DESIGN AND DRAFTING (CAD)
Sylvania Campus
Science Technology Building (ST), Room 208
503-977-4163
www.pcc.edu/programs/drafting-design/

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.
COMPUTER APPLICATIONS AND OFFICE SYSTEMS

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 Computer Applications and Office Systems Certificate will have also completed the first year's work toward the Administrative Assistant Degree. All courses and programs of study in CAS/OS require placement in WR 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 for an evaluation of their skill levels through the PCC Counseling Department. 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 degree 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. This degree requires a CAS/OS certificate with an additional 42 credit hours minimum of required course work. 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.

Web Design and Development: Represents a significant and growing industry segment that combines computer programming, extensive knowledge of software applications and proficiency in multimedia techniques. This program prepares students to plan, create, manage, supervise, 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 Information Systems (CIS) and Multi-Media (MM) Departments have partnered to create an Associate of Applied Science (AAS) degree option. This interdisciplinary degree option 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 web site construction and e-commerce applications, as well as incorporating multimedia techniques into web sites with audio and video applications. All CAS/OS courses applied to this degree must be passed with a “C” or better. In addition to foundational web design and development skills, this degree has two distinct focuses for students to choose from:

- Web Development – This emphasis will focus on web application development, networking, and server setup.
- Web Design – This emphasis will focus on multimedia, graphical as well as layout aspects of web site design.

The Computer Applications and Office Systems 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 Web Site Development Certificate: intended to meet business career needs for entry-level positions that assist web site developers, HTML programmers, web designers, web producers, and web technologists. Certificate completers will be able to create functional web sites and assist in the production of professional dynamic web sites. Administrative support personnel and entrepreneurs will gain the necessary skills to develop and manage departmental and personal web sites. 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 this certificate 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
Web Site Development & Design

One-Year Certificate
Computer Applications and Office Systems
Web Site Development & 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 credit hours. 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 Credit Summary
Admin Assistant Core Courses 63
General Education 16
Admin Asst. Degree Electives 9
Admin Asst. Business Electives 6
Credit Total 94

Administrative Assistant Core Courses
BA 111 Introduction to Accounting 3
BA 205 Solving Communication Problems with Technology 4
BA 285 Human Relations-Organizations 3
CAS 123 Production Keyboarding 3
CAS 133 Basic Computer Skills/Microsoft Office or
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 & 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
Writing course higher than WR 121* 4

*Must have WR 121 as a prerequisite.

Electives and Remaining General Education
Admin Asst. Business Electives 6
Admin Asst. Degree Electives 9
General Education 16

Administrative Assistant Business Electives
Take any BA courses not including BA courses from CAS/OS certificate. May not include BA 131 if CAS 133 was taken.

Administrative Assistant Degree Electives
CAS 103 Introduction to Windows 1
CAS 104 Basic Internet Skills 1
CAS 106 Introduction to X/HTML 1
CAS 109 Beginning PowerPoint 1
CAS 111D Beginning Website Creation: Dreamweaver 3
CAS 111F Beginning Website Creation: Front Page 3
CAS 111E Beginning WebSite Creation: Expression Web 3
CAS 122 Keyboarding for Speed and Accuracy 3
CAS 171 Intermediate Excel 1
CAS 180 Search Engine Optimization 3
CAS 211D Intermediate Dreamweaver 3
CAS 231 Publisher 3
CAS 232 Desktop Publishing: InDesign 3
CIS 178 Applied Internet Concepts 4
OS 250 Creating a Virtual Office 4
OS 251 Virtual Office Concepts 4

ADMINISTRATIVE OFFICE PROFESSIONAL AAS DEGREE
Minimum 90 credit hours. 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
Admin Office Pro Core Courses 70
Cooperative Education 4
General Education 16
Credit Total 90

Administrative Office Professional Core Courses
BA 101 Introduction to Business 4
BA 111 Introduction to Accounting 3
BA 205 Solving Communication Problems with Technology 4
BA 206 Management Fundamentals 3
BA 224 Human Resource Management 3
BA 226 Business Law I 4
BA 228 Computer Accounting Applications 3
BA 285 Human Relations-Organizations 3
CAS 111D Beginning Website Creation: Dreamweaver 3
or
CAS 111E Beginning 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
### Programs and Disciplines

#### 2010–2011

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-Key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>OS 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>OS 240</td>
<td>Filing &amp; Records Management</td>
<td>4</td>
</tr>
<tr>
<td>OS 245</td>
<td>Office Systems and Procedures</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

**General Education and Cooperative Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>OS 280F</td>
<td>Cooperative Education</td>
<td>4</td>
</tr>
</tbody>
</table>

### WEB SITE DEVELOPMENT AND DESIGN AAS DEGREE

Minimum 93 credit hours. 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.

**Web Site Development and Design: Development Emphasis**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website Dev &amp; Design Core Courses</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Development Emphasis Electives</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Total 94**

**Web Site Development and Design: Design Emphasis**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website Dev &amp; Design Core Courses</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Design Emphasis Electives</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Total 93**

### Website Development and Design Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I</td>
<td>4</td>
</tr>
<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
<td>4</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-Commerce Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning WebSite Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of X-HTML</td>
<td>4</td>
</tr>
<tr>
<td>CAS 208</td>
<td>Beginning PhotoShop for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 215</td>
<td>CSS and Dynamic HTML</td>
<td>4</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I*</td>
<td>4</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Computer Concepts II*</td>
<td>4</td>
</tr>
<tr>
<td>CIS 178</td>
<td>Applied Internet Concepts</td>
<td>4</td>
</tr>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
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<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
</tr>
<tr>
<td>MSD 279</td>
<td>Project Management</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education*

### Electives, Remaining General Education and Cooperative Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CAS 280W</td>
<td>CE: Web Site Development</td>
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</table>

**Development Emphasis Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 213</td>
<td>Enhancing Web Pages with JavaScript</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233S</td>
<td>Internet Web Page Scripting</td>
<td>4</td>
</tr>
<tr>
<td>CAS 214</td>
<td>Beginning ColdFusion</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234S</td>
<td>Web Application Development Using .NET</td>
<td>4</td>
</tr>
<tr>
<td>CIS 195P</td>
<td>PHP Web Development I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 225</td>
<td>Introduction to PHP</td>
<td>4</td>
</tr>
<tr>
<td>CIS 122</td>
<td>Software Design*</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133B</td>
<td>Introduction to Visual Basic .NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133J</td>
<td>Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 125D</td>
<td>Database Application Development I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 287I</td>
<td>Web Server Administration</td>
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</tbody>
</table>

**Design Emphasis Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ART 115</td>
<td>Basic Design*</td>
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<tr>
<td>ART 116</td>
<td>Basic Design*</td>
<td>3</td>
</tr>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash</td>
<td>3</td>
</tr>
<tr>
<td>CAS 180</td>
<td>Search Engine Optimization</td>
<td>3</td>
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<tr>
<td>CAS 275</td>
<td>Intermediate Flash</td>
<td>3</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
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</tr>
<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
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<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
<td>4</td>
</tr>
<tr>
<td>MM 231</td>
<td>Vector Graphics &amp; Animation for the World Wide Web</td>
<td>3</td>
</tr>
</tbody>
</table>

*Could be used as General Education*

### COMPUTER APPLICATIONS AND OFFICE SYSTEMS CERTIFICATE

Minimum 52 credit hours. Students must meet certificate requirements.

**Computer Applications and Office Systems Certificate Summary**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS/OS Certificate Core Courses</td>
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<td></td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**Credit Total 52**

### CAS/OS Certificate Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</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</td>
<td>4</td>
</tr>
<tr>
<td>CAS/OS Certificate Elective Course</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Program</td>
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<td>Title</td>
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<tr>
<td>---------</td>
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</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>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
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<tr>
<td>MTH 30</td>
<td>Business Math</td>
<td>1</td>
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<tr>
<td>OS 131</td>
<td>10-Key on Calculators</td>
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</tr>
<tr>
<td>OS 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>OS 240</td>
<td>Filing &amp; Records Management</td>
<td>4</td>
</tr>
<tr>
<td>OS 245</td>
<td>Office Systems and Procedures</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

**General Education**

**CAS/OS Certificate Electives List**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 103</td>
<td>Introduction to Windows</td>
<td>1</td>
</tr>
<tr>
<td>CAS 104</td>
<td>Basic Internet Skills</td>
<td>1</td>
</tr>
<tr>
<td>CAS 106</td>
<td>Introduction to X/HTML</td>
<td>1</td>
</tr>
<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 111F</td>
<td>Beginning Website Creation: Frontpage</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111E</td>
<td>Beginning Website Creation: Expression Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver</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>CAS 232</td>
<td>Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>CIS 178</td>
<td>Applied Internet Concepts</td>
<td>4</td>
</tr>
<tr>
<td>OS 250</td>
<td>Creating a Virtual Office</td>
<td>4</td>
</tr>
<tr>
<td>OS 251</td>
<td>Virtual Office Concepts</td>
<td>4</td>
</tr>
<tr>
<td>OS 280F</td>
<td>CE: Administrative Assistant</td>
<td>varied</td>
</tr>
<tr>
<td>OS 280G</td>
<td>CE: Administrative Assistant</td>
<td>varied</td>
</tr>
</tbody>
</table>

**WEB SITE DEVELOPMENT AND DESIGN CERTIFICATE**

51 minimum credit hours. Students must meet certificate requirements.

**Web Site Development and Design Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Core Courses</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website D&amp;D Certificate Core Courses</td>
<td>37</td>
</tr>
<tr>
<td>Website D&amp;D Certificate Electives</td>
<td>12</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>

**Web Site Development and Design Certificate Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 205</td>
<td>Solving Communication Problems with Technology</td>
<td>4</td>
</tr>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
<td>4</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-sentials of E-Commerce Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Web Site Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash</td>
<td>3</td>
</tr>
</tbody>
</table>

**Virtual Assistant Certificate**

Minimum 27 credit hours. Students must meet all certificate requirements.

**Virtual Assistant Certificate Core Courses**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</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>CAS 111D</td>
<td>Beginning Web Site Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS 250</td>
<td>Creating a Virtual Office</td>
<td>4</td>
</tr>
<tr>
<td>OS 251</td>
<td>Virtual Office Concepts</td>
<td>4</td>
</tr>
<tr>
<td>OS 280F</td>
<td>CE: Administrative Assistant</td>
<td>4</td>
</tr>
<tr>
<td>OS 280G</td>
<td>CE: Administrative Assistant-Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

**Virtual Assistant Certificate Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 140</td>
<td>Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 197</td>
<td>Artist’s Skills/Practical Issues</td>
<td>3</td>
</tr>
<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics Using Fireworks</td>
<td>1</td>
</tr>
<tr>
<td>CAS 225</td>
<td>Introduction to PHP</td>
<td>4</td>
</tr>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>CAS 275</td>
<td>Intermediate Flash</td>
<td>3</td>
</tr>
<tr>
<td>CIS 233B</td>
<td>Intermediate Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234B</td>
<td>Advanced Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234J</td>
<td>Java Programming III</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>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 236</td>
<td>Internet Delivery of Digital Video and Audio Files</td>
<td>3</td>
</tr>
<tr>
<td>MM 245</td>
<td>Internet Delivery Methods</td>
<td>3</td>
</tr>
</tbody>
</table>
### COMPUTER APPLICATIONS AND OFFICE SYSTEMS CAREER PATHWAY CERTIFICATES

#### BASIC COMPUTER LITERACY: CAREER PATHWAY CERTIFICATE
Minimum 13 credit hours. The Basic Computer Literacy Certificate is a career pathway certificate. All courses in the certificate are found in the Administrative Assistant AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy¹</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</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>
</tbody>
</table>

¹If a student already has knowledge of basic computer skills then take a CAS Elective Class from One-year Certificate list.

#### WORD PROCESSING: CAREER PATHWAY CERTIFICATE
Minimum 26 credit hours. The Word Processing Certificate is a career pathway certificate. All courses in the certificate are found in the Administrative Assistant AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS 123</td>
<td>Production 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>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 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition or higher</td>
<td>4</td>
</tr>
</tbody>
</table>

#### SPREADSHEET: CAREER PATHWAY CERTIFICATE
Minimum 27 credit hours. The Spreadsheet Certificate is a career pathway certificate. All courses in the certificate are found in the Administrative Assistant AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS 140</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>MTH 30</td>
<td>Business Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-Key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition or higher</td>
<td>4</td>
</tr>
</tbody>
</table>

#### OFFICE ASSISTANT: CAREER PATHWAY CERTIFICATE
Minimum 43 credit hours. The Office Assistant Certificate is a career pathway certificate. All courses in the certificate are found in the Administrative Assistant and AAS Degree.

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

#### WEB ASSISTANT I: CAREER PATHWAY CERTIFICATE
Minimum 12 credit hours. The Web Assistant I Certificate is a career pathway certificate. All courses in the certificate are found in the Website Development and Design AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics Using Fireworks</td>
<td>1</td>
</tr>
<tr>
<td>CAS 208</td>
<td>Beginning Photoshop for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning WebSite Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of X/HTML</td>
<td>4</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 280W</td>
<td>CE: Web Site Development</td>
<td>1</td>
</tr>
</tbody>
</table>

#### WEB ASSISTANT II CERTIFICATE: CAREER PATHWAY
Minimum 24 credit hours. The Web Assistant II Certificate is a career pathway certificate. All courses in the certificate are found in the Website Development and Design AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics Using Fireworks</td>
<td>1</td>
</tr>
<tr>
<td>CAS 208</td>
<td>Beginning Photoshop for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beg Web Site Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of X/HTML</td>
<td>4</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 213</td>
<td>Enhancing Web Pages w/ JavaScript</td>
<td>4</td>
</tr>
<tr>
<td>CAS 214</td>
<td>Beginning ColdFusion</td>
<td>4</td>
</tr>
<tr>
<td>CAS 280W</td>
<td>CE: Web Site Development</td>
<td>2</td>
</tr>
</tbody>
</table>

### COMPUTER INFORMATION SYSTEMS

Sylvania Campus
Technology Classroom Building (TCB), Room 312
503-977-4287 or 503-977-4393
www.pcc.edu/programs/computer-info/

#### CAREER AND PROGRAM DESCRIPTION
Computer Information Systems are the lifeblood of the 21st century. The mainstream languages, tools, technologies and techniques used in your training will allow you 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 of your choices. On the software side, your career choic-
es 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.

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 multiltier 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
Network Administration Option
Health Informatics

One-Year Certificate
Computer Information Systems

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 credit hours. 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 Summary
CIS Program Electives 36
CIS Core Courses 36
Remaining General Education 8
CIS Programming Electives 8
CIS Program Business Electives 6
Credit Total 94

Computer Information Systems Core Courses
CIS 120 Computer Concepts I* 4
CIS 121 Computer Concepts II* 4
CIS 122 Software Design* 4
CIS 140M Operating Systems I: Microsoft 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 or
WR 227 Technical and Professional Writing I 4
*CIS 120 could be used as General Education

Electives and Remaining General Education
CIS Program Electives1 36
CIS Programming Electives2 8
Remaining General Education 8
CIS Program Business Electives1 6

1 Choose from the CIS Program Business Electives List.
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 CIS Program Electives - 36 credit hours total, 20 credits must be at the 200 level.
NETWORK ADMINISTRATION AAS DEGREE

Minimum 94 credit hours. 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 Summary
Network Admin Core Courses 40
Network Admin Degree Electives 36
Remaining General Education 8
CIS Program Business Electives 6
CIS Programming Electives 4

Credit Total 94

Network Administration Degree Core 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
CIS 145 Microcomputer Hardware and Troubleshooting 4
CIS 179 Data Communication Concepts I 4
CIS 244 Systems Analysis 4
CS 140U Introduction to UNIX 4
WR 121 English Composition 4
WR 122 English Composition 4
WR 227 Technical and Professional Writing I 4

*Could be used as General Education

Electives and Remaining General Education
Network Administration Degree Electives 36
Remaining General Education 8
CIS Program Business Electives1 6
CIS Programming Electives2 4
1Choose from the CIS Program Business Electives List.
2CIS Program Electives - 36 credit hours total, 20 credits must be at the 200 level.

HEALTH INFORMATICS AAS DEGREE

Minimum 96 credit hours. 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
Health Informatics Core Courses 63
Remaining General Education1 16
Health Informatics Degree Electives 17
Credit Total 96

Health Informatics Core Courses
BA 205 Solving Communication Problems with Technology 4
BA 211 Principles of Accounting I 3
CIS 122 Software Design*1 4
CIS 133B Introduction to Visual Basic:Net Programming 4
CIS 133J Java Programming I 4
CS 161 Computer Science I* 4
CIS 125D Database Application Development I 4
CIS 135T XML Data Transformation and Objects 4
CIS 233B Intermediate Visual Basic:Net Programming 4
CIS 233J Java Programming II 4
CS 162 Computer Science II* 4
CIS 140M Operating Systems I: Microsoft 4
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 & SQL Introduction 4
CIS 276 Advanced SQL 4
CIS 280D CE: Application Development 4
CIS 277H Health Informatics Environmental Simulation I 4
HIM 110 Health Information Technology 4
HIM 182 Health Care Delivery Systems 3
HIM 283 Health Information Systems 4
HIM 285 Healthcare Financing & Compliance 3
MP 109 Basic Medical Terminology 2

1*Could be used as General Education
1If used as General Education, an additional eight credits of electives must be taken to meet minimum degree requirements.

Electives and Remaining General Education
Health Informatics Electives 17
Remaining General Education 8

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 & Physiology I 4
BI 122 Introduction to Human Anatomy & Physiology II 4
BI 231 Human Anatomy & Physiology I 4
BI 232 Human Anatomy & Physiology II 4
BI 233 Human Anatomy & Physiology III 4
Programs and Disciplines

CS 140U Introduction to UNIX 4
CS 140M Operating Systems I: Microsoft 4
CS 145 Microcomputer Hardware and Troubleshooting 4
CS 188 Introduction to Wireless Networking 4
CS 189 Wireless Security 4
CS 225 End User Support 4
CS 240L Linux Installation & Configuration 4
CS 240M Managing a Windows Server Environment 4
CS 277D Database Security 4
CS 277O Advanced Database Concepts in Oracle 4
CS 277T Web Business Intelligence Development 4
CS 278 Data Communications Concepts II 4
CS 279L Linux Network Administration 4
CS 284 Network Security 4
CS 288M Microsoft Network Administration 4
CS 289M Microsoft Active Directory Administration 4
HIM 271 Quality Improvement In Healthcare 3
HIM 274 Quality Improvement in Healthcare-Lab 1
HIM 281 Data Management & Analysis I 3
HIM 286 Data Management & Analysis Lab 2
MP 110 Basic Medical Terminology II 2
MP 111 Medical Terminology 4
MSD 279 Project Management-Intro 4
OS 220 Business Editing Skills 4
WR 122 English Composition 4
WR 227 Technical & Professional Writing I 4

E-COMMERCE CERTIFICATE
Minimum 48 credit hours. Students must meet all certificate requirements.

E-commerce Certificate Credit Summary
Track A Design and Development
Track A Electives 20
Track A Core Courses 24
CIS E-Com Business Electives 3
Cooperative Education 1

E-commerce Track A Core Courses
CIS 225 End User Support 4
CIS 243 E-ssentials of E-Commerce Info Systems 4
CIS 244 Systems Analysis 4
CIS 275 Data Modeling and SQL Introduction 4
PSY 201 Introduction to Psychology 4
WR 227 Technical and Professional Writing I 4

Electives and Cooperative Education
Track A: Design and Development Electives 20
E-Commerce Business Electives 3
CIS 280D CE: Application Development 1

Track A: Design and Development Electives
CAS 110 Introduction to Web Graphics Using Fireworks1 1
CAS 175 Introduction to Flash1 4
CAS 211D Intermediate Dreamweaver1 3
CAS 213 Enhancing Web Pages with Javascript1 3
CIS 233B Intermediate VB.NET 4
CIS 234B Advanced VB.NET 4
CIS 234J Java Programming III 4
CIS 233S Web Application Development Using .NET 4
CIS 276 Advanced SQL 4
CIS 277D Database Security 4
CIS 277O Advanced Database Concepts – Oracle 4
CIS 277T Web Business Intelligence Development 4
CIS 280D CE: Application Development 1
MM 130 Graphics Video & Audio Production1 3
MM 230 Graphics for Multimedia1 4

Track B Administrative
Track B Electives 20
Track B Core Courses 24
E-Com Business Electives 3
Cooperative Education 1

Credit Total 48

Optional cooperative education work experience placements are available. For more information, see a CIS Department advisor.

COMPUTER INFORMATION SYSTEMS CERTIFICATE
Minimum 46 credit hours. Students must meet all certificate requirements.

Computer Information Systems Certificate Summary
CIS Certificate Core Courses 31
CIS Program Electives 12
CIS Program Business Electives 3
Credit Total 46

Computer Information Systems Certificate Core Courses
CIS 120 Computer Concepts I 4
CIS 121 Computer Concepts II 4
CIS 122 Software Design 4
CIS 140M Operating Systems I: Microsoft or
CIS 140U Introduction to UNIX 4
PSY 201 Introduction to Psychology 4
WR 121 English Composition 4
WR 227 Technical and Professional Writing I 4
CAS 216 Beginning Word 3
or
CIS Program Electives1 4
or
DRF 126 Introduction to AutoCAD 3

Electives
CIS Program Electives1 12
CIS Program Business Electives2 3

1See the Computer Information Systems Program Electives List
2Choose from CIS Program Business Electives List

Note: Maximum of eight credits will apply.
**Electives and Cooperative Education**

<table>
<thead>
<tr>
<th>Track</th>
<th>Administration Electives</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Commerce Business Electives</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CIS 280D</td>
<td>CE: Application Development</td>
<td>1</td>
</tr>
</tbody>
</table>

**Track B: Administration Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 225</td>
<td>Introduction to PHP</td>
<td>3</td>
</tr>
<tr>
<td>CAS 275</td>
<td>Intermediate Flash</td>
<td>3</td>
</tr>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 240L</td>
<td>Linux Installation and Configuration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 240M</td>
<td>Managing a Windows Server Environment</td>
<td>4</td>
</tr>
<tr>
<td>CIS 279L</td>
<td>Linux Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 280D</td>
<td>CE: Application Development</td>
<td>1</td>
</tr>
<tr>
<td>CIS 287I</td>
<td>Web Server Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 288M</td>
<td>Microsoft Active Directory Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 289M</td>
<td>Microsoft Network Administration</td>
<td>4</td>
</tr>
</tbody>
</table>

**E-Commerce Business 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>3</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
</tbody>
</table>

**COMPUTER INFORMATION SYSTEMS: CAREER PATHWAY CERTIFICATES**

**DATABASE DESIGN AND SQL: CAREER PATHWAY CERTIFICATE**

Minimum 12 credit hours. The Database Design and SQL Certificate is a career pathway certificate. All courses in the certificate are found 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>

**MICROSOFT SERVER ADMINISTRATION: CAREER PATHWAY CERTIFICATE**

Minimum 24 credit hours. The Microsoft Server Administration Certificate is a career pathway certificate. All courses in the certificate are found 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>
<tr>
<td>CIS 287M</td>
<td>Microsoft Server Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 288M</td>
<td>Microsoft Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 289M</td>
<td>Microsoft Active Directory Administration</td>
<td>4</td>
</tr>
</tbody>
</table>

**LINUX/UNIX SERVER NETWORK SECURITY: CAREER PATHWAY CERTIFICATE**

Minimum 28 credit hours. The Linux/Unix Server Administration Certificate is a career pathway certificate. All courses in the certificate are found in the Network Administration AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 189</td>
<td>Wireless Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 240L</td>
<td>Linux Installation and Configuration</td>
<td>4</td>
</tr>
</tbody>
</table>

**WINDOWS NETWORK SECURITY: CAREER PATHWAY CERTIFICATE**

Minimum 36 credit hours. The Windows Network Security Certificate is a career pathway certificate. All courses in the certificate are found in the Network Administration AAS Degree.

<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 189</td>
<td>Wireless Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 240M</td>
<td>Managing a Windows Server Environment</td>
<td>4</td>
</tr>
<tr>
<td>CIS 284</td>
<td>Network Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 286</td>
<td>Computer Forensics</td>
<td>4</td>
</tr>
<tr>
<td>CIS 287M</td>
<td>Microsoft Server Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 288M</td>
<td>Microsoft Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 289M</td>
<td>Microsoft Active Directory Administration</td>
<td>4</td>
</tr>
</tbody>
</table>

**JAVA APPLICATION PROGRAMMING: CAREER PATHWAY CERTIFICATE**

Minimum 16 credit hours. The Java Application Programming Certificate is a career pathway certificate. All courses in the certificate are found 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 122</td>
<td>Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133J</td>
<td>Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233J</td>
<td>Java Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234J</td>
<td>Java Programming III</td>
<td>4</td>
</tr>
</tbody>
</table>

**NETWORK ADMINISTRATION: CAREER PATHWAY CERTIFICATE**

Minimum 16 credit hours. The Network Administration Certificate is a career pathway certificate. All courses in the certificate are found in the Network Administration AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 188</td>
<td>Introduction to Wireless Networking</td>
<td>4</td>
</tr>
<tr>
<td>CIS 189</td>
<td>Wireless Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 278</td>
<td>Data Communication Concepts II</td>
<td>4</td>
</tr>
</tbody>
</table>

**VB.NET APPLICATION PROGRAMMING: CAREER PATHWAY CERTIFICATE**

Minimum 16 credit hours. The VB.Net Application Programming Certificate is a career pathway certificate. All courses in the certificate are found 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 122</td>
<td>Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133B</td>
<td>Introduction to Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233B</td>
<td>Intermediate Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234B</td>
<td>Advanced Visual Basic.NET Programming</td>
<td>4</td>
</tr>
</tbody>
</table>
LINUX SERVER ADMINISTRATION: CAREER PATHWAY CERTIFICATE
Minimum 16 credit hours. The Linux Server Administration Certificate is a career pathway certificate. All courses in the certificate are found 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 credit hours. The Oracle and SQL Certificate is a career pathway certificate. All courses in the certificate are found 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 credit hours. The Web Application Development Certificate is a career pathway certificate. All courses in the certificate are found 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 Information Systems Programming Electives
CS 161 and CS 162 Computer Science sequence
CIS 133B and CIS 233B Visual Basic.NET sequence
CIS 133J and CIS 233J JAVA Programming sequence

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, Data Transformation and Objects  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 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-ssentials 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 Database 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  4
CIS 284 Network Security  4
CIS 286 Computer Forensics  4
CIS 287I Web Server Administration  4
CIS 288M Microsoft Network Administration  4
CIS 289M Microsoft Active Directory Administration  4
CIS 295P PHP Web Development II  4
CS 133U Introduction to C  4
CS 140U Introduction to UNIX  4
CS 160 Exploring Computer Science*  4
CS 161 Computer Science I*  4
CS 162 Computer Science II*  4
CS 201 Computer Systems  4
CS 260 Data Structures  4
CS 261 Programming Systems  4
EET 178 PC Architecture for Technicians  4

Computer Information Systems Program
Business Electives
BA 203 Introduction to International Business  3
BA 206 Management Fundamentals  3
BA 211 Principles of Accounting I  3
BA 212 Principles of Accounting II  3
BA 213 Principles of Accounting III  3
BA 215 Basic Cost Accounting  3
BA 222 Financial Management  3
BA 223 Principles of Marketing  3
BA 226 Business Law I  4
BA 227 Business Law II  3
BA 234 International Marketing  3
BA 240 Non-Profit Financial Management and Accounting  3
BA 242 Introduction to Investments  3
BA 244 Introduction to Records Management  3
BA 250 Small Business Management  3
BA 251 Office Management  3
EC 201 Principles of Economics: Microeconomics*  4
EC 202 Principles of Economics: Macroeconomics*  4
EC 203 Principles of Economics: Applications to Economic Issues*  4

* Could be used as General Education

1A maximum of four CIS 280D credits can be applied toward the CIS degree. Additional credits, up to a maximum of eight, may be applied toward the degree, but must be approved by a CIS Department advisor.
COMPUTER SCIENCE

Rock Creek Campus
Building 2, Room 230
503-614-7331 or 503-614-7604

Sylvania Campus
Technology Classroom Building (TCB), Room 312
503-977-4393 or 503-977-4287
www.pcc.edu/programs/computer-science/

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
503-978-5430
www.pcc.edu/programs/criminal-justice

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 statewide Juvenile Corrections One-Year Certificate was developed at the request of the Oregon Youth Authority (OYA) to prepare entry-level workers to fill positions in the juvenile correctional system. Students who complete this certificate will automatically score 100 on the initial written test for the position of Group Life Coordinator.

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 one-year Juvenile Corrections Certificate and 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 both the AAS degree and Juvenile Corrections Certificate should the student choose to continue their education.

The courses in this certificate program have been designated in conjunction with both the needs and the authority of the OYA.

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

LESS THAN ONE-YEAR CERTIFICATE: CAREER PATHWAY
Corrections Technician Certificate

CRIMINAL JUSTICE AAS DEGREE
Minimum 95 credit hours. 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 Credit Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminal Justice Core Courses</td>
<td>69</td>
</tr>
<tr>
<td>CJA Degree Electives</td>
<td>18</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td><strong>Credit Total 95</strong></td>
<td></td>
</tr>
</tbody>
</table>

Criminal Justice Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>CJA 100</td>
<td>Introduction to Professions in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJA 101</td>
<td>Cultural Diversity in Criminal Justice Professions</td>
<td>3</td>
</tr>
<tr>
<td>CJA 111</td>
<td>Introduction to Criminal Justice System - Police</td>
<td>3</td>
</tr>
<tr>
<td>CJA 112</td>
<td>Introduction to Criminal Justice System - Courts</td>
<td>3</td>
</tr>
<tr>
<td>CJA 113</td>
<td>Introduction to Criminal Justice System - Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJA 114</td>
<td>Introduction to Juvenile Process</td>
<td>3</td>
</tr>
<tr>
<td>CJA 210</td>
<td>Arrest, Search &amp; Seizure</td>
<td>3</td>
</tr>
<tr>
<td>CJA 211</td>
<td>Civil Liability &amp; Ethics in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJA 212</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
</tbody>
</table>
CJA 225  Criminal Justice & the United States Constitution 3
CJA 230  Police Report Writing 4
CJA 243  Narcotics & Dangerous Drugs 3
PS 201  U.S. Government: Foundations and Principals* or
PS 202  U.S. Government: Institutions and Policies* or
PS 203  State and Local Government* 4
PSY 201  Introduction to Psychology* or
PSY 201A  Introduction to Psychology* 4
PSY 202  Introduction to Psychology 4
PSY 202A  Introduction to Psychology 4
PSY 239  Introduction to Abnormal Psychology* 4
SOC 206  General Sociology: Social Problems* 4
SP 111  Public Speaking* 4
WR 121  English Composition 4
WR 227  Technical and Professional Writing I 4

*Could be used as General Education

Electives and Remaining General Education
Remaining General Education 8
CJA Degree Electives 18

Criminal Justice Degree Electives
CJA 115  Introduction to Jail Operations 3
CJA 213  Evidence 3
CJA 214  Criminal Investigations 3
CJA 215  Forensic Science and Criminalistics 3
CJA 217  Interviewing and Interrogation 3
CJA 218  Criminal Justice Perspectives of Violence and Aggression 3
CJA 228  Organized Crime and Terrorism 3
CJA 244  Tactical Communication in Crisis Incidents 3
CJA 245  Search Warrant Preparation 3
CJA 246  Fish and Wildlife Enforcement 3
CJA 247  Introduction to Criminal Gangs 3
CJA 260  Introduction to Correctional Institutions 3
CJA 261  Introduction to Probation and Parole 3
CJA 262  Introduction to Correctional Treatment 3
CJA 263  Introduction to Corrections Casework 3
CJA 264  Introduction to Corrections Administration 3
CJA 280A  CE: Criminal Justice varied

JUVENILE CORRECTIONS CERTIFICATE
Minimum 54 credit hours. Students must meet all certificate requirements.

Juvenile Corrections Certificate Credit Summary
Juvenile Corrections Core Courses 51
Cooperative Education 3
Credit Total 54

Juvenile Corrections Core Courses
AD 101  Alcohol Use and Addiction2 3
AD 150  Basic Counseling and Addiction2 3
AD 151  Basic Counseling Skills Mastery2 1
CAS 133  Basic Computer Skills/Microsoft Office 4
CJA 101  Cultural Diversity in Criminal Justice Professions 3

CJA 113  Introduction to Criminal Justice Systems-Corrections 3
CJA 114  Introduction to Juvenile Process 3
CJA 263  Introduction to Corrections Casework 3
CJA 280A  CE: Criminal Justice1 3
MTH 60  Introductory Algebra - First Term 4
PSY 201  Introduction to Psychology 4
or
PSY 201A  Introduction to Psychology 4
PSY 202  Introduction to Psychology 4
PSY 202A  Introduction to Psychology 4
PSY 222  Family and Intimate Relationships 4
PSY 239  Introduction to Abnormal Psychology 4
SOC 206  General Sociology: Social Problems 4
WR 121  English Composition 4

1Department permission required prior to registration.
2Students must contact Alcohol and Drug Department in order to enroll in AD courses.

CORRECTIONS TECHNICIAN: CAREER PATHWAY CERTIFICATE
Minimum 26 credit hours. Students must meet all certificate requirements. The Corrections Technician Certificate is a Career Pathway. All courses within the certificate are contained in the Criminal Justice AAS Degree.

CAS 133  Basic Computer Skills/Microsoft Office 4
CJA 100  Professions in Criminal Justice 3
CJA 101  Cultural Diversity in Criminal Justice Professions 3
CJA 113  Introduction to Criminal Justice System-Corrections 3
CJA 114  Introduction to Juvenile Process 3
CJA 263  Introduction to Corrections Casework 3
CJA 280A  CE: Criminal Justice 3
WR 121  English Composition 4

CULINARY ASSISTANT
Sylvania Campus
Science & Technology Building (ST), Room 229
503-977-4305
www.pcc.edu/programs/culinary-assistant/

CAREER AND PROGRAM DESCRIPTION
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 service or physical plant staff 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 CERTIFICATE**

Minimum 45 credit hours. Students must meet all certificate requirements

Culinary Assistant Certificate Credit Summary

<table>
<thead>
<tr>
<th></th>
<th>Credit Total 45</th>
</tr>
</thead>
</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>Credit Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>15</td>
</tr>
<tr>
<td>Second Term</td>
<td>15</td>
</tr>
<tr>
<td>Third Term</td>
<td>15</td>
</tr>
</tbody>
</table>

**DANCE**

Cascade Campus
Terrell Hall (TH), Room 2200
503-978-5251

Rock Creek
Building 3, Room 201
503-614-7235

Sylvania Campus
Communications Technology Building (CT), Room 216
503-977-4264

**DESCRIPTION**

PCC offers dance technique courses designed to explore 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 dance concerts or musical theatre productions on campus.

Most dance courses are offered concurrently and co-listed in both the Performing Arts Department and the Physical Education Department. Students can 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 Performing Arts Department, and the Physical Education and Fitness Department for additional information.

**DEALER SERVICE TECHNOLOGY**

Rock Creek Campus
Building 2, Room 230
503-614-7465
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 earthmoving 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 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 503-614-7465.

DEALER SERVICE TECHNOLOGY AAS DEGREE

Minimum 101 credit hours. 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>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST</td>
<td>78</td>
</tr>
<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>
<tr>
<td><strong>Credit Total</strong></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.

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST 110</td>
<td>Caterpillar Engine Fundamentals 8</td>
</tr>
<tr>
<td>DST 111</td>
<td>Introduction to Caterpillar Service Industry 3</td>
</tr>
<tr>
<td>WLD 217</td>
<td>Diesel Welding 3</td>
</tr>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>DST 150</td>
<td>Caterpillar Service Technology Internship (Part I) 6</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
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Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DST 112</td>
<td>Fundamentals of Hydraulics 4</td>
</tr>
<tr>
<td>DST 113</td>
<td>Caterpillar Engine Fuel Systems 4</td>
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<tr>
<td>DST 114</td>
<td>Fundamentals of Electrical Systems 4</td>
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</table>

Fourth Term (1st Module)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>DST 150</td>
<td>Caterpillar Service Technology Internship (Part II) 6</td>
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Fourth Term (2nd Module)

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<tbody>
<tr>
<td>DST 115</td>
<td>Air Conditioning 3</td>
</tr>
<tr>
<td>DST 116</td>
<td>Fundamentals of Transmissions and Torque Converters 4</td>
</tr>
<tr>
<td>DST 117</td>
<td>Caterpillar Machine Hydraulic Systems 4</td>
</tr>
<tr>
<td>General Education</td>
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</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST 150</td>
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Sixth Term

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>DST 200</td>
<td>Undercarriage and Final Drive 4</td>
</tr>
<tr>
<td>DST 201</td>
<td>Machine Electronic Systems 4</td>
</tr>
<tr>
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<tr>
<td>General Education</td>
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Seventh Term

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</tr>
</thead>
<tbody>
<tr>
<td>DST 150</td>
<td>Caterpillar Service Technology Internship (Part IV) 6</td>
</tr>
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</table>

Eighth Term

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
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<tbody>
<tr>
<td>DST 202</td>
<td>Caterpillar Engine Performance 3</td>
</tr>
<tr>
<td>DST 203</td>
<td>Caterpillar Machine Diagnostic 3</td>
</tr>
<tr>
<td>DST 204</td>
<td>Machine Specific Systems 6</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition 4</td>
</tr>
</tbody>
</table>

DENTAL ASSISTING

Sylvania Campus
Health Technology Building (HT), Room 206
503-977-4236

Health Admissions Office
Health Technology Building (HT), Room 205
503-977-4795

www.pcc.edu/programs/dental-assisting/

CAREER AND PROGRAM DESCRIPTION

The dental assistant is a member of the dental team, working with and assisting the dentist 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 amalgam restorations, fabricate and cement temporary crowns, remove cement, place temporary restorations, place and remove matrix retainers, place sealants, temporary denture relines and 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 Dental Sciences Department or www.pcc.edu/programs/dental/assisting and should be submitted along with high school and college transcripts to:

Dental Sciences Department
Sylvania Campus, (HT) Room 206
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 503-977-4795 or 503-977-4236, or check the web site www.pcc.edu/programs/dental/assisting.

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 on-going 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.

Prerequisites may be in progress at the time of application 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).

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 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 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/rr5217al.htm. Table 1, attached to and incorporated by this reference to this policy.

DENTAL ASSISTING CERTIFICATE

Minimum 45 credit hours. Students must meet certificate requirements.

Dental Assisting Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA 110 Clinical Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>DA 111 Clinical Procedures I Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 120 Dental Radiology I</td>
<td>2</td>
</tr>
<tr>
<td>DA 121 Dental Radiology I Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 130 Dental Materials I</td>
<td>1</td>
</tr>
<tr>
<td>DA 131 Dental Materials I Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 140 Integrated Basic Science I</td>
<td>3</td>
</tr>
<tr>
<td>DA 160 Dental Pharmacology</td>
<td>1</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>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA 110 Clinical Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>DA 111 Clinical Procedures I Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 120 Dental Radiology I</td>
<td>2</td>
</tr>
<tr>
<td>DA 121 Dental Radiology I Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 130 Dental Materials I</td>
<td>1</td>
</tr>
<tr>
<td>DA 131 Dental Materials I Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 140 Integrated Basic Science I</td>
<td>3</td>
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<tr>
<td>DA 160 Dental Pharmacology</td>
<td>1</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>DA 112 Clinical Procedures II</td>
<td>1</td>
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<tr>
<td>DA 113 Clinical Procedures II Lab</td>
<td>3</td>
</tr>
<tr>
<td>DA 118 Expanded Duties I</td>
<td>1</td>
</tr>
<tr>
<td>DA 122 Dental Radiology II</td>
<td>1</td>
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<tr>
<td>DA 123 Dental Radiology II Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 132 Dental Materials II</td>
<td>1</td>
</tr>
<tr>
<td>DA 133 Dental Materials II Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 142 Integrated Basic Science II</td>
<td>2</td>
</tr>
<tr>
<td>DA 150 Dental Office Procedures I</td>
<td>2</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA 114 Clinical Procedures III</td>
<td>1</td>
</tr>
<tr>
<td>DA 115 Clinical Procedures Lab III</td>
<td>5</td>
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<tr>
<td>DA 119 Expanded Duties II</td>
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<td>DA 125 Dental Radiology III Lab</td>
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<tr>
<td>DA 135 Dental Materials III Lab</td>
<td>2</td>
</tr>
<tr>
<td>DA 152 Dental Office Procedures II</td>
<td>2</td>
</tr>
<tr>
<td>DA 156 Ethics and Jurisprudence</td>
<td>1</td>
</tr>
</tbody>
</table>

DENTAL HYGIENE

Sylvania Campus
Health Technology Building (HT), Room 206
503-977-4909

Health Admissions Office
Health Technology Building (HT), Room 205
503-977-4795

www.pcc.edu/programs/dental-hygiene/
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 requiring reports. 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. These requirements can be met through General Education.

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 Professions Advising Office:

Dental Sciences Department
Sylvania Campus, (HT) Room 206
Portland Community College
P.O. Box 19000
Portland, Oregon 97280-0990

For additional help call 503-977-4795 or check the web site www.pcc.edu/programs/dental-hygiene/

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Dental Hygiene

PREREQUISITES AND REQUIREMENTS

1. High school diploma or GED

2. 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:
   a. WR 121 English Composition
   b. MTH 65 or higher
   c. BI 121 and BI 122 or BI 231 and BI 232 Human Anatomy and Physiology sequence with lab*
   d. BI 234 Microbiology with lab must be completed within the last seven years
   e. 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. Applicants in progress with pre-requisite courses during winter term are required to submit transcripts by the April 15th deadline.

These prerequisite courses may be in progress at the time of application (winter term.) 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 mid to late May.

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).

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, 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 91 credit hours. 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>DH 75</td>
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<tr>
<td>Remaining General Education</td>
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<tr>
<td>FN 4</td>
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</table>

**Credit Total: 91**

### 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>DH 101</td>
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<tr>
<td>DH 104</td>
<td>3</td>
</tr>
<tr>
<td>DH 113</td>
<td>2</td>
</tr>
<tr>
<td>DH 113L</td>
<td>1</td>
</tr>
<tr>
<td>DH 121</td>
<td>1</td>
</tr>
<tr>
<td>DH 127</td>
<td>2</td>
</tr>
<tr>
<td>General Education¹</td>
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#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>DH 102</td>
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<td>DH 105</td>
<td>3</td>
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<td>DH 110</td>
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<tr>
<td>DH 128</td>
<td>1</td>
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<td>DH 228</td>
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<td>DH 236</td>
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<td>DH 230</td>
<td>2</td>
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<tr>
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#### Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>DH 103</td>
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<tr>
<td>DH 106</td>
<td>3</td>
</tr>
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<td>DH 109</td>
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<td>DH 109L</td>
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#### Fourth Term

<table>
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<td>FN 270</td>
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#### Fifth Term

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<td>DH 208</td>
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<tr>
<td>DH 229</td>
<td>2</td>
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<tr>
<td>DH 260</td>
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#### Sixth Term

<table>
<thead>
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<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
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<tr>
<td>DH 250</td>
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<td>DH 252</td>
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#### Seventh Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
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<td>DH 203</td>
<td>3</td>
</tr>
<tr>
<td>DH 206</td>
<td>5</td>
</tr>
<tr>
<td>DH 253</td>
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</tbody>
</table>

### Optional Dental Hygiene Courses

Students should consult with program advisor for assistance with planning electives.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>DH 100</td>
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</tr>
<tr>
<td>DH 232</td>
<td>2</td>
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</tbody>
</table>

### DENTAL LABORATORY TECHNOLOGY

**Sylvania Campus**  
Health Technology Building (HT), Room 206  
503-977-4236

Health Admissions Office  
Health Technology Building (HT), Room 205  
503-977-4795

[www.pcc.edu/programs/dental-tech/](http://www.pcc.edu/programs/dental-tech/)

### 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:

**Dental Sciences Department**  
Sylvania Campus, HT 206  
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.
3. Completion of math placement test (prerequisite).
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 20 or higher to receive the Certificate. Students obtaining the AAS degree 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 credit hours vary from 1-5, depending on the technicians needs.

**DENTAL LABORATORY TECHNOLOGY AAS DEGREE**
Minimum 95 credit hours. 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 Laboratory Technology Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
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<td>DT</td>
<td>68</td>
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<tr>
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</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>DLT Electives</td>
<td>4</td>
</tr>
<tr>
<td>HE</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95</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>DT 101</td>
<td>6</td>
</tr>
<tr>
<td>DT 120</td>
<td>2</td>
</tr>
<tr>
<td>DT 141</td>
<td>2</td>
</tr>
<tr>
<td>DT 151</td>
<td>2</td>
</tr>
<tr>
<td>MTH 65</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 102</td>
<td>6</td>
</tr>
<tr>
<td>DT 142</td>
<td>2</td>
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<tr>
<td>DT 152</td>
<td>3</td>
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<tr>
<td>HE 125</td>
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<td>GE</td>
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</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 103</td>
<td>6</td>
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<tr>
<td>DT 143</td>
<td>2</td>
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<tr>
<td>SP 100</td>
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</tr>
<tr>
<td>DLT Electives</td>
<td>4</td>
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</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 204</td>
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<tr>
<td>DT 253</td>
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<tr>
<td>DT 270</td>
<td>3</td>
</tr>
<tr>
<td>DT 275</td>
<td>2</td>
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**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 205</td>
<td>6</td>
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<tr>
<td>DT 254</td>
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<tr>
<td>DT 272</td>
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<td>DT 276</td>
<td>1</td>
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**General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 206</td>
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<tr>
<td>DT 271</td>
<td>2</td>
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<tr>
<td>DT 284</td>
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</tr>
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<td>DT 285</td>
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**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DT 207</td>
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<tr>
<td>DT 272</td>
<td>3</td>
</tr>
<tr>
<td>DT 284</td>
<td>2</td>
</tr>
<tr>
<td>DT 285</td>
<td>2</td>
</tr>
</tbody>
</table>

**DENTAL LABORATORY TECHNOLOGY CERTIFICATE**
Minimum 79 credit hours. Students must meet all certificate requirements. The Dental Laboratory Technology Certificate is a related certificate. All courses within the certificate are contained in the Dental Laboratory Technology AAS Degree.

Dental Laboratory Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DT</td>
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<tr>
<td>MTH</td>
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<td><strong>Total</strong></td>
<td><strong>79</strong></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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<tbody>
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<tr>
<td>DT 151</td>
<td>2</td>
</tr>
<tr>
<td>MTH 65</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 102</td>
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<td>DT 142</td>
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<td>3</td>
</tr>
<tr>
<td>HE 125</td>
<td>3</td>
</tr>
<tr>
<td>GE</td>
<td>4</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT 103</td>
<td>6</td>
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<tr>
<td>DT 143</td>
<td>2</td>
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<tr>
<td>SP 100</td>
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<tr>
<td>DLT Electives</td>
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**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DT 204</td>
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<tr>
<td>DT 253</td>
<td>2</td>
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<tr>
<td>DT 270</td>
<td>3</td>
</tr>
<tr>
<td>DT 275</td>
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</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
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<tr>
<td>DT 272</td>
<td>3</td>
</tr>
<tr>
<td>DT 276</td>
<td>1</td>
</tr>
</tbody>
</table>

**General Education**

<table>
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<tr>
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<tbody>
<tr>
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<td>2</td>
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<tr>
<td>DT 284</td>
<td>2</td>
</tr>
<tr>
<td>DT 285</td>
<td>2</td>
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**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DT 207</td>
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<tr>
<td>DT 272</td>
<td>3</td>
</tr>
<tr>
<td>DT 284</td>
<td>2</td>
</tr>
<tr>
<td>DT 285</td>
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</tbody>
</table>

**DENTAL LABORATORY TECHNOLOGY Degree Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 101</td>
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<tr>
<td>BA 226</td>
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</tr>
<tr>
<td>EC 200</td>
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<td>EC 201</td>
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<tr>
<td>EC 216</td>
<td>4</td>
</tr>
<tr>
<td>ESR 172</td>
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<tr>
<td>FN 225</td>
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<tr>
<td>HE 242</td>
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</tr>
<tr>
<td>PSY 240</td>
<td>4</td>
</tr>
<tr>
<td>SOC 203</td>
<td>4</td>
</tr>
</tbody>
</table>

**DENTAL LABORATORY TECHNOLOGY Certificate Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>4</td>
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<tr>
<td>BA 226</td>
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</tr>
<tr>
<td>EC 200</td>
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<td>EC 216</td>
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<td>ESR 172</td>
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<tr>
<td>FN 225</td>
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<tr>
<td>HE 242</td>
<td>4</td>
</tr>
<tr>
<td>PSY 240</td>
<td>4</td>
</tr>
<tr>
<td>SOC 203</td>
<td>4</td>
</tr>
</tbody>
</table>
DIESEL SERVICE TECHNOLOGY

Rock Creek Campus
Building 2, Room 117
503-614-7488, 503-614-7246 or
503-614-7275
www.pcc.edu/about/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
College placement test administered through the testing centers.

For a One-Year and Two-Year Certificate only
1. Completion of college placement test.
2. Placement of WR 90 or higher or completion of WR 80.
3. Placement into RD 90 or higher or completion of RD 80.
4. Placement into MTH 60 or higher or completion of MTH 20.

These courses can be taken before, during or after the student is taking the diesel classes.

DIESEL SERVICE TECHNOLOGY AAS DEGREE
Minimum 92 credit hours. 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 Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG 209</td>
<td>Job Finding Skills</td>
<td>1</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I*</td>
<td>4</td>
</tr>
<tr>
<td>or CAS 133</td>
<td>Basic Computer Skills/Microsoft Office¹</td>
<td>4</td>
</tr>
<tr>
<td>DS 101</td>
<td>Engine Rebuild and Lab Procedures</td>
<td>12</td>
</tr>
<tr>
<td>DS 102</td>
<td>Truck Power Train</td>
<td>6</td>
</tr>
<tr>
<td>DS 103</td>
<td>Fuel Injection Systems</td>
<td>6</td>
</tr>
<tr>
<td>DS 104</td>
<td>Fundamentals of Electricity &amp; Electronics</td>
<td>6</td>
</tr>
<tr>
<td>DS 105</td>
<td>Fundamentals of Hydraulics/AC Systems</td>
<td>6</td>
</tr>
<tr>
<td>DS 106</td>
<td>PMI and Detroit Diesel Electronic Control</td>
<td>3</td>
</tr>
<tr>
<td>DS 202</td>
<td>Heavy Duty Power Train</td>
<td>6</td>
</tr>
<tr>
<td>DS 203</td>
<td>Fuel Injection System Diagnosis and Caterpillar Electronic Engine Controls</td>
<td>6</td>
</tr>
<tr>
<td>DS 204</td>
<td>Diesel Starting, Charging &amp; Electronic Control Systems</td>
<td>6</td>
</tr>
<tr>
<td>DS 205</td>
<td>Mobile and Hydrostatic Hydraulics</td>
<td>6</td>
</tr>
<tr>
<td>DS 206</td>
<td>Medium/Heavy Duty Brakes, Suspension and Steering Systems</td>
<td>9</td>
</tr>
<tr>
<td>WLD 217</td>
<td>Diesel Welding</td>
<td>3</td>
</tr>
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</table>

¹Could be used as General Education

General Education
Remaining General Education                          12

¹ If students take CAS 133 then they will have to take four more credits of general education to meet the general education requirements.

DIESEL SERVICE TECHNOLOGY TWO-YEAR CERTIFICATE
Minimum 80 credit hours. The Diesel Service Technology Two Year Certificate is a related certificate. All courses for the certificate are within the Diesel Service Technology AAS Degree.

Diesel Service Technology Two-Year Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG 209</td>
<td>Job Finding Skills</td>
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</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I*</td>
<td>4</td>
</tr>
<tr>
<td>or CAS 133</td>
<td>Basic Computer Skills/Microsoft Office¹</td>
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</tr>
<tr>
<td>DS 101</td>
<td>Engine Rebuild and Lab Procedures</td>
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<tr>
<td>DS 102</td>
<td>Truck Power Train</td>
<td>6</td>
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<tr>
<td>DS 103</td>
<td>Fuel Injection Systems</td>
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</tr>
<tr>
<td>DS 104</td>
<td>Fundamentals of Electricity &amp; Electronics</td>
<td>6</td>
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<tr>
<td>DS 105</td>
<td>Fundamentals of Hydraulics/AC Systems</td>
<td>6</td>
</tr>
<tr>
<td>DS 106</td>
<td>PMI and Detroit Diesel Electronic Control</td>
<td>3</td>
</tr>
<tr>
<td>DS 202</td>
<td>Heavy Duty Power Train</td>
<td>6</td>
</tr>
<tr>
<td>DS 203</td>
<td>Fuel Injection System Diagnosis and Caterpillar Electronic Engine Controls</td>
<td>6</td>
</tr>
</tbody>
</table>
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 from 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 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 credit hour. 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 Summary**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE Degree Core Courses</td>
<td>47</td>
</tr>
<tr>
<td>ECE Practicum</td>
<td>17</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>ECE Seminar</td>
<td>12</td>
</tr>
<tr>
<td>ECE Degree Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Total 92

**Early Education and Family Studies Core Courses**

- **ECE 120 Introduction to Early Education and Family Studies** 3
- **ECE 121 Observation & Guidance I** 3
- **ECE 122 Environments & Curriculum in Early Care and Ed I** 4
- **ECE 123 Environments & Curriculum in Early Care and Ed II** 4
- **ECE 124 Multicultural Practice: Exploring Our Views** 3
- **ECE 200 The Professional in ECE** 3
- **ECE 221 Observation and Guidance II** 3
- **ECE 224 Multicultural Practices: Curriculum & Implementation** 3
- **ECE 234 Children with Special Needs in Early Childhood Education** 3
- **ECE 236 Language and Literacy Development in ECE** 3
- **HE 112 First Aid and Emergency Care** 1
- **HE 262 Children's Health, Safety, and Nutrition** 3
- **HEC 201 Family Partnership Education** 3
- **HEC 226 Child Development** 4
- **WR 121 English Composition** 4

*Could be used as General Education

**Practicums and Seminars**

- **ECE 130 Practicum Seminar** 4
- **ECE 133 Practicum I Lab** 3
- **ECE 134 Practicum II Lab** 3

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.

1Students with a valid CPR card may receive non-traditional credit.

2Students must enroll in practicum seminar each term they take practicum.

**Early Education and Family Studies Degree Electives**

- **BA 177 Payroll Accounting** 3
- **BA 223 Principles of Marketing** 3
- **BA 224 Human Resource Management** 3
- **BA 250 Small Business Management** 3
- **BA 285 Human Relations-Organizations** 3
- **CIS 120 Computer Concepts I** 4
- **ECE 170 Coaching & Mentoring in Early Education and Family Studies** 1
- **ECE 173 Children & Loss: The Effects of Death and Divorce** 1
- **ECE 174 Head Start Past and Present** 1
- **ECE 175A Infant/Toddler Caregiving: Learning and Development** 1
- **ECE 175B Infant/Toddler Caregiving: Group Care** 1
- **ECE 175C Infant/Toddler Caregiving: Social/Emotional Growth** 1
- **ECE 175D Infant/Toddler Caregiving: Family/Provider Relationships** 1
- **ECE 177 Tiny to Tall: Making Mixed Age Groupings Work** 1
- **ECE 179 The Power of Portfolios in Early Education** 1
- **ECE 184 Children’s Puppetry & Theater** 1
- **ECE 185 Planning Fun and Meaningful Field Trips for Young Children** 1
- **ECE 197 Career Exploration in Early Education and Family Studies** 1

**EARLY EDUCATION AND FAMILY STUDIES CERTIFICATE**

Minimum 34 credit hours. Students must meet certificate requirements.

**Early Education and Family Studies Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE Core Courses</td>
<td>24</td>
</tr>
<tr>
<td>Practicum</td>
<td>6</td>
</tr>
<tr>
<td>Seminar</td>
<td>4</td>
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</table>

Credit Total 34

**Early Education and Family Studies Certificate Core Courses**

- **ECE 120 Introduction to Early Education and Family Studies** 3
- **ECE 121 Observation & Guidance I** 3
- **ECE 122 Environments & Curriculum in Early Care and Ed I** 4
- **ECE 123 Environments & Curriculum in Early Care and Ed II** 4
- **ECE 124 Multicultural Practice: Exploring Our Views** 3
- **HEC 201 Family Partnership Education** 3
- **HE 262 Children's Health, Safety, and Nutrition** 3
- **HE 112 First Aid and Emergency Care** 1

1Students with a valid CPR card may receive non-traditional credit.

2Students must enroll in practicum seminar each term they take practicum.
Programs and Disciplines

ECE 198 Building Effective Outdoor Environments 1
ECE 235 Music and Movement in Early Childhood Education 3
ECE 238 Administration of Early Childhood Programs 3
ED 102 Displays & Graphics for Educators 3
ED 112 Introduction to Children's Literature 3
ED 115 Storytelling 2
ED 131 Applied Learning Theory 3
ED 136 Computers in Education 3
ED 200 Intro to Education for Paraeducators 4
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 & Intimate Relationships 4
PSY 240 Personal Awareness and Growth 4
SOC 213 General Sociology: 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 II 4
SOC 214C Illumination Project: Tools for Creative Social Activism III 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
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7327

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Sylvania Campus
Social Science Building (SS), Room 215
503-977-4289

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
503-978-5191, 503-978-5229 or 503-978-5430
www.pcc.edu/pcc/pro/progs/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.

Portland Community College • 2010–2011
2. An Associate of General Studies Degree. Students take a combination of 45-60 credit hours from option one, plus 16 credit hours of General Education in order to complete the 90 credit hours necessary to receive an associate degree. Students completing the two-year option have varying 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 credit hours 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 credit hours 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.

**PARAEDUCATOR AAS DEGREE**

Minimum 90 credit hours. 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.

**Paraeducator Degree Credit Summary**

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED Degree Core Courses</td>
<td>55</td>
</tr>
<tr>
<td>ED Gen Education Program Electives</td>
<td>14</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>ED Specialization Electives</td>
<td>9</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
</tr>
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**Paraeducator Degree Core Courses**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>100</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>102</td>
<td>Displays &amp; Graphics for Educators</td>
<td>3</td>
</tr>
<tr>
<td>123</td>
<td>Instructional Methods: Reading</td>
<td>3</td>
</tr>
<tr>
<td>124</td>
<td>Instructional Methods: Math and Science</td>
<td>3</td>
</tr>
<tr>
<td>131</td>
<td>Applied Learning Theory</td>
<td>3</td>
</tr>
<tr>
<td>136</td>
<td>Computers in Education</td>
<td>3</td>
</tr>
<tr>
<td>217</td>
<td>Classroom Management</td>
<td>3</td>
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<td>252</td>
<td>Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>224</td>
<td>Foundations in Education</td>
<td>3</td>
</tr>
<tr>
<td>251</td>
<td>Overview of Exceptional Learners</td>
<td>3</td>
</tr>
<tr>
<td>258</td>
<td>Multicultural Education: Principles1</td>
<td>3</td>
</tr>
<tr>
<td>259</td>
<td>Multicultural Education: Applications1</td>
<td>3</td>
</tr>
<tr>
<td>263</td>
<td>Portfolio Development</td>
<td>2</td>
</tr>
<tr>
<td>268</td>
<td>Introduction to Developmental Disabilities1</td>
<td>3</td>
</tr>
<tr>
<td>269</td>
<td>Introduction to Teaching the Learning Disabled2</td>
<td>3</td>
</tr>
<tr>
<td>270</td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td>271</td>
<td>Practicum II</td>
<td>3</td>
</tr>
<tr>
<td>290</td>
<td>Sheltered Instruction for English Language Learners2</td>
<td>3</td>
</tr>
<tr>
<td>291</td>
<td>Bilingual and ESL Strategies2</td>
<td>3</td>
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<tr>
<td>215</td>
<td>Human Development*</td>
<td>4</td>
</tr>
<tr>
<td>121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</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

**Remaining General Education and Electives**

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Education Specialization Electives</td>
<td>9</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>Paraeducator General Education Program Electives1</td>
<td>14</td>
</tr>
</tbody>
</table>

1 Any course from the General Education list. Must include a minimum of four credits from each category
### Programs and Disciplines

#### Education Specialization Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 103</td>
<td>Desktop Publishing for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 104</td>
<td>Multimedia for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 109</td>
<td>Library Procedures</td>
<td>3</td>
</tr>
<tr>
<td>ED 111</td>
<td>Selection of Library Materials</td>
<td>3</td>
</tr>
<tr>
<td>ED 112</td>
<td>Introduction to Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>ED 114</td>
<td>Reference Materials</td>
<td>3</td>
</tr>
<tr>
<td>ED 115</td>
<td>Storytelling</td>
<td>2</td>
</tr>
<tr>
<td>ED 116</td>
<td>Literature for Adolescence and Young Adults</td>
<td>3</td>
</tr>
<tr>
<td>ED 161</td>
<td>Leadership Through Advocacy and Representation</td>
<td>1</td>
</tr>
<tr>
<td>ED 162</td>
<td>Leadership Through Civic Engagement</td>
<td>2</td>
</tr>
<tr>
<td>ED 163</td>
<td>Personal Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>ED 171</td>
<td>Computers in Education III</td>
<td>3</td>
</tr>
<tr>
<td>ED 206</td>
<td>Practicum: Advanced Education Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ED 214</td>
<td>Practicum: Outdoor School</td>
<td>3</td>
</tr>
<tr>
<td>ED 217</td>
<td>Classroom Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 218</td>
<td>Working with Paraeducators</td>
<td>3</td>
</tr>
<tr>
<td>ED 252</td>
<td>Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 258</td>
<td>Multicultural Education: Principles</td>
<td>3</td>
</tr>
<tr>
<td>ED 259</td>
<td>Multicultural Education: Applications</td>
<td>3</td>
</tr>
<tr>
<td>ED 260</td>
<td>Multicultural Education for Children and Young Adults</td>
<td>3</td>
</tr>
<tr>
<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>ED 269</td>
<td>Introduction to Teaching the Learning Disabled Student</td>
<td>3</td>
</tr>
<tr>
<td>ED 272</td>
<td>Practicum III</td>
<td>3</td>
</tr>
<tr>
<td>ED 290</td>
<td>Bilingual and ESL Strategies</td>
<td>3</td>
</tr>
<tr>
<td>ED 298A</td>
<td>Special Projects in Education</td>
<td>1</td>
</tr>
<tr>
<td>ED 298B</td>
<td>Special Projects in Education</td>
<td>2</td>
</tr>
<tr>
<td>ED 298C</td>
<td>Special Projects in Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 298D</td>
<td>Special Projects in Education</td>
<td>4</td>
</tr>
<tr>
<td>ED 298E</td>
<td>Special Projects in Education</td>
<td>5</td>
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</tbody>
</table>

#### PARAEDUCATOR CERTIFICATE

Minimum 51 credit hours. Students must meet certificate requirements.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 100</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 102</td>
<td>Displays &amp; Graphics for Educators</td>
<td>3</td>
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<tr>
<td>ED 123</td>
<td>Instructional Methods: Reading</td>
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<td>ED 124</td>
<td>Instructional Methods: Math and Science</td>
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<tr>
<td>ED 131</td>
<td>Applied Learning Theory</td>
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</tr>
<tr>
<td>ED 136</td>
<td>Computers in Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 217</td>
<td>Classroom Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 252</td>
<td>Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 224</td>
<td>Foundations in Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 251</td>
<td>Overview of Exceptional Learners</td>
<td>3</td>
</tr>
<tr>
<td>ED 258</td>
<td>Multicultural Education: Principles</td>
<td>3</td>
</tr>
<tr>
<td>ED 259</td>
<td>Multicultural Education: Applications</td>
<td>3</td>
</tr>
<tr>
<td>ED 263</td>
<td>Portfolio Development</td>
<td>2</td>
</tr>
<tr>
<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>ED 269</td>
<td>Introduction to Teaching the Learning Disabled</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Only two courses are required.
2. Only two of the three literature courses are required.
3. Math 211 may be substituted.

### LIBRARY/MEDIA ASSISTANT CERTIFICATE

Minimum 44 credit hours. Students must meet certificate requirements.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 100</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 102</td>
<td>Displays and Graphics for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 103</td>
<td>Desktop Publishing for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 104</td>
<td>Multimedia for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 109</td>
<td>Library Procedures</td>
<td>3</td>
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<tr>
<td>ED 111</td>
<td>Selection of Library Materials</td>
<td>3</td>
</tr>
<tr>
<td>ED 112</td>
<td>Introduction to Children's Literature</td>
<td>3</td>
</tr>
<tr>
<td>ED 206</td>
<td>Practicum: Advanced Education Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ED 217</td>
<td>Practicum II</td>
<td>3</td>
</tr>
<tr>
<td>ED 224</td>
<td>Foundations in Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 225</td>
<td>Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>ED 270</td>
<td>Practicum III</td>
<td>3</td>
</tr>
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</table>

1. Only two of the three courses are required.
2. Only two of the three literature courses are required.

### ELECTRICAL TRADES

#### SEE APPRENTICESHIP

**ELECTRONIC ENGINEERING TECHNOLOGY**

Sylvania Campus
Science Technology Building (ST), Room 208
503-977-4163

**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 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: Wireless and Data Communications Engineering Technology Option
- Electronic Engineering Technology: Mechatronics/Automation/Robotics Engineering Technology Option
- Electronic Engineering Technology: Renewable Energy Systems Option

**One-Year Certificate**
- Electronic Engineering Technology

**Less Than One-Year 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.

Placement into WR 115 and MTH 95 or higher:
- Electronic Engineering Technology AAS Degree
- Electronic Engineering Technology Certificate

Completion of WR 121 and placement into MTH 95 or higher:
- Renewable Energy Systems AAS Degree
- Renewable Energy Systems Certificate
- Mechatronics/Automation/Robotics Engineering Technology AAS Degree
- Biomedical Engineering Technology AAS Degree
- Wireless and Data Communications Engineering Technology AAS Degree
- Renewable Energy Systems Certificate

1MP 111 & (BI121 & 122) or (BI231, 232, 233) are also needed prior to beginning the fall term of the second year of the program.

Full-time and Part-Time EET students: EET is a limited enrollment program for students seeking a degree. 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 BSEET. The Electronic Engineering AAS as well as all other degrees and certificates within the program fully transfer into Oregon Institute of Technology's BSEET 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 102 credit hours. 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 Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET</td>
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<tr>
<td>PHY</td>
<td>12</td>
</tr>
<tr>
<td>MTH</td>
<td>14</td>
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<tr>
<td>Remaining General Education</td>
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<tr>
<td>WR</td>
<td>4</td>
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<td>CS</td>
<td>4</td>
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</table>

Credit Total 102

**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>EET 101 Intro to Electronic Technology</td>
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</tr>
<tr>
<td>EET 111 Electrical Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td>EET 121 Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 111B College Algebra-Business, Management Life &amp; Social Science*</td>
<td>5</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>MTH 111C College Algebra for Math, Science &amp; Engineering</td>
<td>5</td>
</tr>
<tr>
<td>WR 121 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 112 Electrical Circuit Analysis II</td>
<td>5</td>
</tr>
<tr>
<td>EET 122 Digital Systems II</td>
<td>3</td>
</tr>
<tr>
<td>EET 188 Industrial Safety</td>
<td>1</td>
</tr>
<tr>
<td>MTH 112 Elementary Functions*</td>
<td>5</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CS 133U Introduction to C⁵</td>
<td>4</td>
</tr>
<tr>
<td>EET 113 Electrical Power</td>
<td>5</td>
</tr>
<tr>
<td>EET 123 Digital Systems III</td>
<td>5</td>
</tr>
<tr>
<td>EET 178 PC Architecture for Technicians</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 221 Semiconductor Devices &amp; Circuits</td>
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</tr>
<tr>
<td>EET 241 Microcomputer Systems</td>
<td>4</td>
</tr>
<tr>
<td>MTH 243 Statistics¹</td>
<td>4</td>
</tr>
<tr>
<td>PHY 201 General Physics¹</td>
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</tbody>
</table>
### Programs and Disciplines

#### Portland Community College • 2010–2011

**Fifth Term**
- EET 222 Operational Amplifier Circuits 5
- EET 242 Microcontroller Systems 4
- EET 254 EET Seminar 1
- PHY 202 General Physics* 4
- General Education 3

**Sixth Term**
- EET 223 RF Communications Circuits 5
- EET 255 Industrial Control Systems 4
- EET 256 Electronic Capstone Project 2
- EET 280A CE: Electronics Engineering Technology 4
- PHY 203 General Physics* 4

*Could be used to as General Education

**Recommended General Education:**

SP 111, Public Speaking is required by OIT (Arts and Letters).

1 PHY 211 may be substituted
2 PHY 212 may be substituted
3 PHY 213 may be substituted
4 MTH 251 may be substituted
5 CS 161 may be substituted (required by OIT)

### BIOMEDICAL ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 103 credit hours. 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 Summary**
- EET 68
- Cooperative Education 11
- MTH 10
- Remaining General Education 6
- CIS 4
- CS 4

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**
- EET 101 Introduction to Electronic Technology 1
- EET 111 Electric Circuit Analysis I 5
- EET 121 Digital Systems I 3
- MTH 111B College Algebra-Business, Management, Life & Social Science* 5
- MTH 111C College Algebra for Math, Science and Engineering* 5
- General Education 3

**Second Term**
- CIS 179 Data Communication Concepts I 4
- EET 112 Electric Circuit Analysis II 5
- EET 122 Digital Systems II 3
- EET 188 Industrial Safety 1
- MTH 112 Elementary Functions* 5

**Third Term**
- CS 133U Introduction to C* 4
- EET 113 Electrical Power 5
- EET 123 Digital Systems III 5
- EET 178 PC Architecture for Technicians 4

**Fourth Term**
- EET 221 Semiconductor Devices & Circuits 5
- EET 241 Microcomputer Systems 4
- or
- CIS 278 Data Communication Concepts II 4
- EET 260 Biomedical Equipment I 4
- General Education 3

**Fifth Term**
- EET 222 OP-Amp Circuits 5
- EET 242 Microcontroller Systems 4
- EET 254 EET Seminar 1
- EET 261 Biomedical Equipment II 4
- EET 280C CE: BMET Practicum2 4

**Sixth Term**
- EET 223 RF Communications Circuits 5
- EET 255 Industrial Control Systems 4
- EET 280C CE: BMET Practicum2 7

*Could be used as General Education

1 CS 161 may be substituted (required by OIT)
2 A total of 11 credits of EET 280C-CE: BMET Practicum required.
3 MP 111; (BI 121/122) OR (BI 231/232/233) must be completed before beginning the fourth term.

**Recommended General Education:**

SP 111 Public Speaking is required by OIT (Arts and Letters).

PHL 205 Biomedical Ethics (Social Science)

### WIRELESS AND DATA COMMUNICATIONS ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 102 credit hours. 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 Summary**
- EET 58
- MTH 14
- CIS 16
- CS 4
- Remaining General Education 6
- WR 4

Credit Total 102

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

**First Term**
- EET 101 Introduction to Electronic Technology 1
- EET 111 Electric Circuit Analysis I 5
- EET 121 Digital Systems I 3
- MTH 111B College Algebra-Business, Management, Life & Social Science* 5
- MTH 111C College Algebra for Math, Science and Engineering* 5
- General Education 3

**Second Term**
- CIS 179 Data Communication Concepts I 4
- EET 112 Electric Circuit Analysis II 5
- EET 122 Digital Systems II 3
- EET 188 Industrial Safety 1
- MTH 112 Elementary Functions* 5
- MTH 111C College Algebra for Math, Science and Engineering* 5
- WR 121 English Composition 4
### Second Term
- **EET 112** Electric Circuit Analysis II 5
- **EET 122** Digital Systems II 3
- **EET 188** Industrial Safety 1
- **MTH 112** Elementary Functions* 5
- General Education 3

### Third Term
- **CS 133U** Introduction to C 4
- **EET 113** Electric Power 5
- **EET 123** Digital Systems III 5
- **EET 178** PC Architecture for Technicians 4

### Fourth Term
- **EET 221** Semiconductor Devices and Circuits 5
- **EET 241** Microcomputer Systems 4
- **MTH 243** Statistics I* 4
- General Education 3

### Fifth Term
- **CIS 179** Data Communication Concepts I 4
- **CIS 188** Introduction to Wireless Network 4
- **EET 222** Op-Amp Circuits 5
- **EET 242** Microcontroller Systems 4
- **EET 254** EET Seminar 1

### Sixth Term
- **CIS 189** Wireless Security 4
- **CIS 278** Data Communication Concepts II 4
- **EET 223** RF Communications Circuits 5
- **EET 256** Electronic Capstone Project 2
- **EET 280A** CE: Electronic Engineering Technology

*Could be used as General Education

### Recommended General Education:
SP 111 Public Speaking is required by OIT (Arts and Letters).
1CS 161 may be substituted (required by OIT)
2MTH 251 may be substituted

### RENEWABLE ENERGY SYSTEMS AAS DEGREE
Minimum 105 credit hours. 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.

### Renewable Energy Systems Degree Summary
<table>
<thead>
<tr>
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<tbody>
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<td>CMET</td>
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<td>RES Program Electives</td>
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<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.
MECHATRONICS/AUTOMATION/ROBOTICS ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 106 credit hours. 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>
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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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<tbody>
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<tr>
<td>MTH 111C</td>
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<td>PHY 201</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>EET 122</td>
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<tr>
<td>EET 188</td>
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<tr>
<td>MTH 112</td>
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Third Term

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<td>EET 113</td>
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<tr>
<td>EET 123</td>
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<td>PHY 203</td>
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</table>

Fourth Term

<table>
<thead>
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<th>Course</th>
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Fifth Term

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<td>EET 241</td>
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<td>MCH 121</td>
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Sixth Term

<table>
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<td>EET 242</td>
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Seventh Term

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<td>EET 280A</td>
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<td>EET 178</td>
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<tr>
<td>General Education</td>
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</tbody>
</table>

*Could be used as General Education

Mechatronics/Automation/Robotics Engineering Technology Degree Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<td>EET 223</td>
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<td>ELT 125</td>
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<td>ELT 126</td>
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<tr>
<td>ELT 225</td>
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<td>MCH 158</td>
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<td>MT 102</td>
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<td>MT 104</td>
<td>1</td>
</tr>
<tr>
<td>MT 222</td>
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</tbody>
</table>

Please check with the department for advice with electives for the following areas: general manufacturing, semiconductor/solar manufacturing, etc.

ELECTRONIC ENGINEERING TECHNOLOGY CERTIFICATE

Minimum 53 credit hours. Students must meet certificate requirements. The Electronic Engineering Technology Certificate is a related certificate. All courses within the certificate are contained in the Electronic Engineering Technology AAS Degree.

Electronic Engineering Technology Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>EET</td>
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<td>WR</td>
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<td>CS</td>
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<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53</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>
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<tbody>
<tr>
<td>EET 101</td>
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<tr>
<td>EET 111</td>
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<td>WR 121</td>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET 112</td>
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<td>EET 122</td>
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<td>EET 188</td>
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<td>MTH 112</td>
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<td>PHY 202</td>
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Third Term

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>CS 133U</td>
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</tr>
<tr>
<td>EET 123</td>
<td>5</td>
</tr>
<tr>
<td>EET 178</td>
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</tbody>
</table>

1CS 161 may be substituted (required by OIT)
RENEWABLE ENERGY SYSTEMS:
CAREER PATHWAY CERTIFICATE
Minimum 42 credit hours. Students must meet certificate requirements. The Renewable Energy Systems Certificate is a career pathway certificate. All courses within the certificate are contained in the Renewable Energy Systems AAS Degree.

Renewable Energy Systems Certificate Credit Summary
EET 26
MTH 10
General Education 3
RES Program Electives 3
Credit Total 42

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

First Term
- EET 101 Introduction to Electronic Technology 1
- EET 110 Intro to Renewable Energy 3
- EET 111 Electric Circuit Analysis I 5
- EET 121 Digital Systems I 3
- MTH 111C College Algebra for Math, Science and Engineering 5
- General Education 3

Second Term
- EET 112 Electric Circuit Analysis II 5
- EET 122 Digital Systems II 3
- EET 188 Industrial Safety 1
- MTH 112 Elementary Functions 5

Third Term
- EET 113 Electrical Power 5
- RES Program Electives 3

Renewable Energy Systems Program Electives
Wind Power:
- EET 269 Wind Power 3
- RET 122 Mechanical Power 5

Solar Manufacturing:
- MT 101 Introduction to Semiconductor Manufacturing 1
- MT 102 Introduction to Semiconductor Devices 1
- MT 104 Introduction to Solar voltaic Processing 1

EMERGENCY MANAGEMENT
Cascade Campus
Public Safety Education Building (PSEB), Room 133
503-978-5530

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 in 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.

PROGRAM PREREQUISITES
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 credit hours. 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 & EM 4
- Emergency Management Program Electives 4

Second Term
- EM 103 Intro to Radio Communications 3
- EM 203 Principles & Practices of Disaster Response I 4
- PHL 191 Critical Thinking: Language & Layout of Argument* 4
- PS 203 State & Local Government 4
- General Education 4
Programs and Disciplines

Third Term
- EM 202 Principles & Practices of Hazard Mitigation 3
- EM 204 Principles & Practices of Disaster Response II 4
- ETC 105 Crisis Intervention & 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 & Law in EM 3
- MSD 101 Principles of Management & Supervisory 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 & Human Relations* 4
- WR 227 Technical and Professional Writing I 4

Sixth Term
- EM 222 Disaster Exercise Design & 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 credit hours. Students must also meet certificate requirements. The Emergency Management Certificate is a Career Pathway. All courses within the certificate 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 & EM 4
- EM 202 Principles & Practices of Hazard Mitigation 3
- EM 203 Principles & Practices of Disaster Response I 4
- EM 204 Principles & Practices of Disaster Response II 4
- EM 205 Disaster Recovery Operations 3
- ETC 105 Crisis Intervention & 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 TECHNICIAN – Paramedic
Cascade Campus
Public Services Education Building (PSEB), Room 133
503-978-5530; Fax 503-978-5535
www.pcc.edu/programs/emt

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 emergency medical technicians. After successful completion of all requirements for EMS-Basic, Intermediate, or Paramedic training, the student is eligible to apply to take the respective state certification exam. Other emergency medical training offered includes First Responder, first aid, CPR, and EMT continuing education.

The Emergency Medical Services Department trains and educates EMS professionals to excel in meeting the needs of the community. EMTs 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 EMTs.

DEGREES AND CERTIFICATES OFFERED
- Associate of Applied Science Degree
  Emergency Medical Technician-Paramedic
- Two-Year Certificate
  Emergency Medical Technician

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, Tetanus (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).

Applicants for the Basic and Intermediate levels must meet all prerequisite requirements prior to acceptance into the program. Satisfactory Criminal History Background checks will be mandatory to qualify for clinical rotations and state certification. The cost for Criminal History Background checks is the responsibility of the applicant/student. Bring photocopies of transcripts, immunization documentation and completed application to the EMS Depart-
Programs and Disciplines

Portland Community College • 2010–2011

ment for review. Incomplete applications will not be accepted. Applicants for the paramedic level must complete a departmental selection process. Attendance at the first class is mandatory. No exceptions. 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 credit hours. 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>
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<th>Course</th>
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<td>SP</td>
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<td><strong>Credit Total</strong></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.

**First Term**

- EMS 100 Intro to Emergency Medical Services 3
- HPE 295 Health and Fitness for Life 3
- WR 121 English Composition 4
- General Education 4

**Second Term**

- BI 231 Human Anatomy & Physiology I* 4
- EMS 105 EMS Basic - Part I 5
- MTH 65 Introductory Algebra 4
- PSY 101 Psychology/Human Relations* or higher 4
- SP 111 Public Speaking *or higher 3

**Third Term**

- BI 232 Human Anatomy and Physiology II* 4
- CAS or CIS 101 or higher 3
- EMS 106 EMS Basic - Part II 5
- EMS 116 EMS Rescue 3

**Fourth Term**

- BI 233 Human Anatomy and Physiology III* 4
- EMS 113 Emergency Response Communication/Documentation 2
- EMS 114 Emergency Response Patient Transportation 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

**Eighth Term**

- EMS 250 Paramedic Field Internship II 7
- EMS 252 Paramedic III 2

*Could be used as General Education

EMERGENCY MEDICAL TECHNICIAN CERTIFICATE

Minimum 67 credit hours. Students must meet certificate requirements. The Emergency Medical Technician Certificate is a related certificate. All courses within the certificate are contained in the Emergency Medical Technician AAS Degree.

Emergency Medical Technician Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS</td>
<td>26</td>
</tr>
<tr>
<td>BI</td>
<td>12</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<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>HP</td>
<td>3</td>
</tr>
<tr>
<td>SP</td>
<td>3</td>
</tr>
<tr>
<td>CAS or CIS</td>
<td>3</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>67</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
EMS 100 Intro to Emergency Medical Services 3
HPE 295 Health and Fitness for Life 3
WR 121 English Composition 4
General Education 4

Second Term
BI 231 Human Anatomy & Physiology I 4
EMS 105 EMS Basic - Part I 5
MTH 65 Introductory Algebra 4
PSY 101 Psychology/Human Relations or higher 4
SP 111 Public Speaking or higher 3

Third Term
BI 232 Human Anatomy and Physiology II 4
EMS 106 EMS Basic - Part II 5
EMS 116 EMS Rescue 3
CAS/CIS 101 or higher 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 Patient Transportation 2
General Education 4

EMERGENCY TELECOMMUNICATOR/911 DISPATCHER

Cascade Campus
Public Services Education Building (PSEB), Room 129
503-978-5424
www.pcc.edu/programs/emergency-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 46 credit hours 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 46 credit hour 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

PROGRAM 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 may be accepted any 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 a fingerprint card and letter requesting criminal history information to the Oregon State Police. 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 CERTIFICATE
Minimum 47 credit hours. Students must meet all certificate requirements.

Emergency TeleCommunicator Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETC 30</td>
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</tr>
<tr>
<td>EM 7</td>
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<tr>
<td>EMS 3</td>
<td></td>
</tr>
<tr>
<td>CAS 3</td>
<td></td>
</tr>
<tr>
<td>CJA 3</td>
<td></td>
</tr>
<tr>
<td>ETC Electives 1</td>
<td></td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>47</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>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 101</td>
<td>Introduction to Emergency Services 4</td>
</tr>
<tr>
<td>ETC 103</td>
<td>Introduction to Emergency Telecommunications 4</td>
</tr>
<tr>
<td>ETC 106</td>
<td>Introduction to Criminal Law 3</td>
</tr>
<tr>
<td>ETC 108</td>
<td>Transcription 2</td>
</tr>
<tr>
<td>ETC 110</td>
<td>Communication Center Operations – Basic Skills 3</td>
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</table>

Second Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 122</td>
<td>Keyboarding 3</td>
</tr>
<tr>
<td>CJA 101</td>
<td>Cultural Diversity in Public Safety 3</td>
</tr>
<tr>
<td>EM 103</td>
<td>Introduction to Radio Communication 3</td>
</tr>
<tr>
<td>ETC 104</td>
<td>Emergency Telecommunications – Call-Taking 4</td>
</tr>
<tr>
<td>ETC 111</td>
<td>Communication Center Operations – Intermediate Skills 3</td>
</tr>
</tbody>
</table>

Third Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 120</td>
<td>Fire Responder 3</td>
</tr>
<tr>
<td>ETC 105</td>
<td>Crisis Intervention 3</td>
</tr>
<tr>
<td>ETC 112</td>
<td>Communication Center Operations-Adv 3</td>
</tr>
<tr>
<td>ETC 115</td>
<td>ETC: Capstone 3</td>
</tr>
<tr>
<td>ETC 202</td>
<td>Emergency Medical Dispatcher Overview 2</td>
</tr>
<tr>
<td>ETC Electives 1</td>
<td>1</td>
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</table>

Emergency Telecommunicator/911 Dispatcher Electives
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 110</td>
<td>Theory of Emergency Management 3</td>
</tr>
<tr>
<td>EM 114</td>
<td>History of U.S. Hazards, Disasters and Emergency Management 4</td>
</tr>
<tr>
<td>ETC 201</td>
<td>Law Enforcement Data System (LEDS) 1</td>
</tr>
<tr>
<td>ETC 203A</td>
<td>Tactical Dispatch for High Risk Incidents 1</td>
</tr>
<tr>
<td>ETC 280A</td>
<td>CE: Emergency Telecommunicator/911 Dispatcher varied</td>
</tr>
</tbody>
</table>

EMPLOYMENT SKILLS TRAINING

CAREER AND PROGRAM DESCRIPTION
Minimum 12 credit hours and a maximum of 44. 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.

Less than One-Year Certificate
Employment Skills Training

PROGRAM 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. 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
CAREER AND PROGRAM DESCRIPTION

Engineering is a profession in which knowledge of mathematics and natural 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 in chemical, civil, computer, electrical, environmental, industrial, manufacturing, and mechanical engineering, and construction engineering management 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). 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.

The use of a scientific, programmable, graphing calculator is required for the program.

See the Course Description (ENGR prefix) section of this catalog for individual Engineering courses and course prerequisites.

ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)

Cascade Campus
Terrell Hall (TH), Room 220
503-978-5518

Rock Creek Campus
Building 3, Room 226
503-614-7425

Southeast Center
Mt. Tabor Hall (MTH), Room 128
503-788-6255

Sylvania Campus
Communication Tech Building (CT), Room 205
503-977-4565

www.pcc.edu/prepare/esol/

PROGRAM 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 503-978-5670 (CA), 503-614-7150 (RC) or 503-977-8310 (SY).

ENVIRONMENTAL STUDIES

Cascade Campus
Jackson Hall (JT), Room 210
503-978-5209

Rock Creek Campus
Building 7, Room 202
503-614-7257

Sylvania Campus
Health Technology Building (HT), Room 305
503-977-4225

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. See the Course Description (ESR prefix) section of this catalog for individual environmental science courses and their prerequisites.

FACILITIES MAINTENANCE TECHNOLOGY

Cascade Campus
Technology Education Building (TEB), Room 101
503-978-5650, 503-978-5651
www.pcc.edu/programs/facilities-maintenance/

CAREER AND PROGRAM DESCRIPTION

The Facilities Maintenance Technician (FMT) installs, maintains, and repairs HVAC/R and other equipment and systems where environmental quality is essential. FMTs work in the semi-conductor industry, large health care facilities, heavy industry organizations, commercial facilities, or for HVAC/R companies.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Facilities Maintenance Technology

Less than One-Year Certificate
Facilities Maintenance Technology

Less than One-Year: Career Pathway Certificate
HVAC/R Installer
Oregon State Bureau of Labor and Industries Approved Pre-Apprenticeship Training

PREREQUISITES AND REQUIREMENTS

It is required that students test into MTH 20, into WR 90 or higher and RD 90 or higher. Individual course prerequisites are listed in the Course Description section of this catalog.

This program will provide the student with the skills to enhance a career in facilities maintenance. It was designed by the advisory committee to meet industry requirements. Students learn the skills and concepts necessary to install, operate, maintain and repair control, piping and mechanical systems in large commercial, medical, institutional and industrial buildings. Students also learn trouble shooting skills, problem solving methods and electrical concepts. Continuous improvement techniques and effective written, verbal and electronic communications skills are stressed across the curriculum. Classes are designed in lecture and lecture/lab format to give the student a solid foundation in general maintenance skills including HVAC/R. Print reading and troubleshooting skills are emphasized.

FACILITIES MAINTENANCE AAS DEGREE

Minimum 90 credit hours. 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.

Facilities Maintenance Degree Credit Summary

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMT Core Courses</td>
<td>59</td>
</tr>
<tr>
<td>FMT Program Electives</td>
<td>15</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>8</td>
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<tr>
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</table>

Facilities Maintenance Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 162</td>
<td>Blueprint Reading II</td>
<td>2</td>
</tr>
<tr>
<td>BA 131</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>ELT 125</td>
<td>Basic Programmable Controllers</td>
<td>2</td>
</tr>
<tr>
<td>ELT 126</td>
<td>Intermediate Programmable Controllers</td>
<td>2</td>
</tr>
<tr>
<td>ELT 201</td>
<td>Electric Motor Controls</td>
<td>2</td>
</tr>
<tr>
<td>ELT 204</td>
<td>Adjustable Speed Drives</td>
<td>2</td>
</tr>
<tr>
<td>ELT 220</td>
<td>OSHA 30 Hour Safety Training</td>
<td>3</td>
</tr>
<tr>
<td>ELT 225</td>
<td>Advanced Programmable Controllers</td>
<td>2</td>
</tr>
<tr>
<td>FMT 100</td>
<td>Intro to Facilities Maintenance Systems</td>
<td>2</td>
</tr>
<tr>
<td>FMT 101</td>
<td>Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 102</td>
<td>Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 103</td>
<td>Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 111</td>
<td>Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 112</td>
<td>Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 113</td>
<td>Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 119</td>
<td>Water Treatment and Distribution</td>
<td>2</td>
</tr>
<tr>
<td>FMT 122</td>
<td>Introduction to Boilers</td>
<td>3</td>
</tr>
<tr>
<td>FMT 125</td>
<td>Natural Gas Equipment I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 201</td>
<td>Introduction to Chiller Systems</td>
<td>3</td>
</tr>
<tr>
<td>FMT 202</td>
<td>Direct Digital Controls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Technology</td>
<td>3</td>
</tr>
<tr>
<td>FMT 207</td>
<td>Pneumatic Controls</td>
<td>2</td>
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<tr>
<td>FMT 222</td>
<td>Intermediate Boilers</td>
<td>3</td>
</tr>
<tr>
<td>PHY 101</td>
<td>Fundamentals of Physics I*</td>
<td>4</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations*</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education

Electives, Remaining General Education and Cooperative Education

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMT Electives</td>
<td>15</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>FMT 280A Cooperative Work Experience</td>
<td>8</td>
</tr>
</tbody>
</table>

FACILITIES MAINTENANCE CERTIFICATE

Minimum 44 credit hours. Students must meet certificate requirements. The Facilities Maintenance Certificate is a related certificate. All courses within the certificate are in the Facilities Maintenance AAS Degree.

Facilities Maintenance Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>FMT Core Courses</td>
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<tr>
<td>FMT Program Electives</td>
<td>3</td>
</tr>
<tr>
<td>Credit Total</td>
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### Facilities Maintenance Certificate Core Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARCH</td>
<td>Blueprint Reading II</td>
<td>2</td>
</tr>
<tr>
<td>BA</td>
<td>Computers in Business</td>
<td>4</td>
</tr>
<tr>
<td>ELT</td>
<td>Basic Programmable Controllers</td>
<td>2</td>
</tr>
<tr>
<td>ELT</td>
<td>OSHA 30 Hour Safety Training</td>
<td>3</td>
</tr>
<tr>
<td>FMT</td>
<td>Intro to Facilities Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Water Treatment and Distribution</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Introduction to Boilers</td>
<td>3</td>
</tr>
<tr>
<td>FMT</td>
<td>Natural Gas Equipment I</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Introduction to Chiller Systems</td>
<td>3</td>
</tr>
<tr>
<td>FMT</td>
<td>Direct Digital Controls</td>
<td>3</td>
</tr>
<tr>
<td>FMT</td>
<td>Intermediate Boilers</td>
<td>3</td>
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### Facilities Maintenance Certificate Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>APR</td>
<td>Exploring Trades and Apprenticeship</td>
<td>2</td>
</tr>
<tr>
<td>APR</td>
<td>Trades Preparation</td>
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<tr>
<td>ART</td>
<td>Sculpture: Mixed Media</td>
<td>3</td>
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<tr>
<td>BA</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>ELT</td>
<td>Electricity for Non-Electricians</td>
<td>2</td>
</tr>
<tr>
<td>ELT</td>
<td>Fiber Optics I</td>
<td>4</td>
</tr>
<tr>
<td>ELT</td>
<td>Fiber Optics II</td>
<td>4</td>
</tr>
<tr>
<td>ELT</td>
<td>Fiber Optics: Inside/Outside Plant</td>
<td>4</td>
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<tr>
<td>ELT</td>
<td>Electricity for Non-Electricians II</td>
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<tr>
<td>ELT</td>
<td>Basic Human Machine Interface (HMI)</td>
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</tr>
<tr>
<td>FMT</td>
<td>Oil Furnace Service</td>
<td>2</td>
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<tr>
<td>FMT</td>
<td>Lock Service and Repair</td>
<td>4</td>
</tr>
<tr>
<td>FMT</td>
<td>Heat Pumps</td>
<td>3</td>
</tr>
<tr>
<td>FMT</td>
<td>Basic HVAC/R Installation &amp; Techniques</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Commercial Refrigeration Shop</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Commercial Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>FMT</td>
<td>Residential Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>MSD</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MTH</td>
<td>College Algebra for Math, Science &amp; Engineering</td>
<td>5</td>
</tr>
<tr>
<td>PHY</td>
<td>Fundamentals of Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHY</td>
<td>Fundamentals of Physics III</td>
<td>4</td>
</tr>
<tr>
<td>WLD</td>
<td>Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>Technical and Professional Writing I</td>
<td>4</td>
</tr>
</tbody>
</table>

### HVAC/R INSTALLER: CAREER PATHWAY CERTIFICATE

Minimum 14 credit hours. The HVAC/R Installer Certificate is a career pathway certificate. All courses for the certificate are within the Facilities Maintenance AAS Degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>FMT</td>
<td>Refrigeration I</td>
<td>2</td>
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<tr>
<td>FMT</td>
<td>Refrigeration II</td>
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</tr>
<tr>
<td>FMT</td>
<td>Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>FMT</td>
<td>Basic HVAC/R Installation</td>
<td>2</td>
</tr>
</tbody>
</table>

### FIRE PROTECTION TECHNOLOGY

Cascade Campus
Public Services Education Building (PSEB), Room 132
503-978-5532 Fax 503-978-5535

www.pcc.edu/programs/fire-protection/

### CAREER AND PROGRAM DESCRIPTION

Those training in the Fire Protection Technology Program are preparing for occupations and 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 students wishing 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

### PREREQUISITES AND REQUIREMENTS

1. Completion of Fire Protection application Package
2. Completion of Fire Protection Program Orientation.

### APPLICATION AND ACCEPTANCE

Program applications are accepted year round. Program orientations are held at the end of each term for students that want to enroll in the following term. Students can take any 100 level fire protection classes without officially applying or completing the orientation, but it is recommended that both are completed prior to registering when possible. The program application and orientation do not guarantee placement into the Firefighting Skills Academy (FP 111 and FP 112).

Note: A separate application is required each term for placement into the Firefighting Skills Academy. Students that apply and are not successful or that start a Fire Academy but must withdraw, must re-apply for the academy each term. The academy’s two-term sequence starts in the fall and spring terms each year. The program application and orientation must be completed prior to placement into a Firefighting Skills Academy.

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 students who demonstrate unsuitable characteristics (unsafe, unethical or immoral behavior or that physically are unable to perform standard job duties) into another area of study.

Students enrolled in fire protection courses will be required to use equipment designed to protect the respiratory system from the products of combustion and hazardous chemicals. This equip-
ment includes, but is not limited to: self contained breathing apparatus (SCBA), respirators and filter mask. Students who have a health, physical, or psychological problem which 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 Firefighting Skills Academy class is mandatory. No exceptions. 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 or reprimand, resignation in lieu of termination, a limitation or restriction of scope of practice or dismissal for cause.)

6. Have you ever 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?

A maximum of 80 Pass/No Pass credits are allowed in the Fire Protection Technology AAS Degree.

**FIRE PROTECTION TECHNOLOGY AAS DEGREE**

Minimum 104 credit hours. 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>Fire Protection Technology Degree Credit Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Protection Core Courses</td>
</tr>
<tr>
<td>Cooperative Education</td>
</tr>
<tr>
<td>Remaining General Education</td>
</tr>
<tr>
<td>Fire Protection Degree Electives</td>
</tr>
<tr>
<td>Credit Total</td>
</tr>
</tbody>
</table>

**Fire Protection Core Course**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>EMS 105</td>
<td>EMS Basic Part I</td>
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<tr>
<td>EMS 106</td>
<td>EMS Basic Part II</td>
<td>5</td>
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<tr>
<td>FP 101</td>
<td>Introduction to Fire Protection</td>
<td>3</td>
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<tr>
<td>FP 111</td>
<td>Firefighter I Skills Academy</td>
<td>10</td>
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<tr>
<td>FP 112</td>
<td>Firefighter II Skills Academy</td>
<td>7</td>
</tr>
<tr>
<td>FP 121</td>
<td>Fire Behavior and Combustion</td>
<td>3</td>
</tr>
<tr>
<td>FP 122</td>
<td>Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FP 123</td>
<td>Hazardous Material Awareness/Operation</td>
<td>3</td>
</tr>
<tr>
<td>FP 133</td>
<td>Wildland Firefighter</td>
<td>3</td>
</tr>
<tr>
<td>FP 200</td>
<td>Fire Service Hydraulics and Water Supply</td>
<td>3</td>
</tr>
<tr>
<td>FP 201</td>
<td>Emergency Service Rescue</td>
<td>4</td>
</tr>
<tr>
<td>FP 202</td>
<td>Fixed Systems and Extinguishers</td>
<td>3</td>
</tr>
<tr>
<td>FP 203A</td>
<td>Introduction to Firefighting Tactics &amp; Strategy</td>
<td>3</td>
</tr>
<tr>
<td>FP 211</td>
<td>Building Construction for Firefighters</td>
<td>3</td>
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<tr>
<td>FP 212</td>
<td>Fire Investigation (Cause Determination)</td>
<td>3</td>
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<tr>
<td>FP 214</td>
<td>OCC Safety &amp; Health for Fire</td>
<td>3</td>
</tr>
<tr>
<td>FP 232</td>
<td>Pump Const &amp; Hydraulics II</td>
<td>2</td>
</tr>
<tr>
<td>HPE 295</td>
<td>Health and Fitness for Life</td>
<td>3</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations*</td>
<td>4</td>
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<tr>
<td>SP 111</td>
<td>Public Speaking*</td>
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</tbody>
</table>

*Could be used as General Education

**Electives, Remaining General Education and Cooperative Education**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SF 102</td>
<td>Fire Protection Degree Electives</td>
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<tr>
<td>SF 200A</td>
<td>CE: Fire Science</td>
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**Fire Protection Degree Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FP 113</td>
<td>Firefighting Skills III</td>
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<tr>
<td>FP 131</td>
<td>Introduction to High Angle Rescue</td>
<td>.5</td>
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<tr>
<td>FP 132</td>
<td>Fire App/Pump Construction Operation and Hydraulics</td>
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</tr>
<tr>
<td>FP 141</td>
<td>Introduction Water Rescue</td>
<td>.5</td>
</tr>
<tr>
<td>FP 151</td>
<td>Aircraft Crash and Rescue Basics</td>
<td>.5</td>
</tr>
<tr>
<td>FP 152</td>
<td>Emergency Response to Terrorism</td>
<td>2</td>
</tr>
<tr>
<td>FP 161</td>
<td>Vehicle Extrication Basics</td>
<td>.5</td>
</tr>
<tr>
<td>FP 213</td>
<td>Principles of Supervision for Firefighters</td>
<td>3</td>
</tr>
<tr>
<td>FP 214</td>
<td>Occupational Safety &amp; Health for the Fire Science</td>
<td>3</td>
</tr>
<tr>
<td>FP 215</td>
<td>Urban Interface Fire Operations</td>
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<tr>
<td>FP 231</td>
<td>Aircraft Crash Rescue Practices</td>
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</tr>
<tr>
<td>FP 233</td>
<td>Aerial Ladder Operations for Firefighters</td>
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<tr>
<td>FP 240</td>
<td>Emergency Services Instructor</td>
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</tr>
<tr>
<td>FP 242</td>
<td>Flammable, Explosive and Toxic Materials</td>
<td>3</td>
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<tr>
<td>FP 243</td>
<td>Laws Affecting Fire Fighting</td>
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<tr>
<td>FP 250</td>
<td>Emergency Services Instructor II</td>
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<tr>
<td>FP 252</td>
<td>High Angle Rescue I</td>
<td>3</td>
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<tr>
<td>FP 260</td>
<td>Emergency Services Instructor III</td>
<td>3</td>
</tr>
<tr>
<td>FP 262</td>
<td>Water Rescue for Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FP 280B</td>
<td>CE: Fire Science-Seminar</td>
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</tr>
<tr>
<td>FP 283</td>
<td>Public Sector Employment Workshop (Fire)</td>
<td>3</td>
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<tr>
<td>FP 293</td>
<td>Advanced Firefighting Tactics &amp; Strategy</td>
<td>1</td>
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<tr>
<td>FP 9010</td>
<td>Fire Management Practices</td>
<td>1</td>
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<tr>
<td>FP 9020</td>
<td>Fire Department Budgets</td>
<td>1</td>
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</tbody>
</table>
FP  9030  Planning Fire Protection  1
FP  9040  Managing Fire Personnel  1
FP  9050  Public Relations Information and Education  1
FP  9060  Fire Science II Chemistry  3
FP  9070  Major Emergency Tactics/Strategy  3
FP  9080  Fire Fighting Safety & Survival for Company Officers  1
FP  9110  Fire Inspection Practices  3
FP  9120  Fire Codes & Related Ordinances  3
FP  9130  Hazardous Materials Investigation  3
FP  9140  Fire Officer I  4
FP  9150  Fire Officer II  4
FP  9210  Arson Law, Evidence, Motives  3
FP  9250  Advanced Fire and Arson Investigation  4

All Fire Protection, Emergency Medical Technician, Criminal Justice, Emergency Telecommunications and Emergency Management courses that are not currently required for the AAS degree in Fire Protection Technology are pre-approved for use as electives. Some General Education courses may also meet the requirements. In order to meet credit minimum for the degree requirements, some courses may count toward electives or General Education, but not both. Approval for electives that are not pre-approved must be granted by a Fire Protection Department advisor.

FITNESS TECHNOLOGY

Sylvania Campus
Health Technology Building (HT), Room 215
503-977-4210
www.pcc.edu/programs/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, along with training in interpersonal skills, customer relations, behavior modifications and fitness promotion.

The Fitness Technology program has an articulation agreement in place with both PSU and OSU. Students who successfully complete the Fitness Technology AAS degree may transfer to either school as a junior.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Fitness Technology

One-Year Certificate
Fitness Technology

Less Than One-Year Certificate: Career Pathway
Healthy Older Adult Fitness

PREREQUISITES AND REQUIREMENTS

1. High school diploma or equivalent
2. Attend Fitness Technology orientation. Contact administrative assistant in HT 215 or call 503-977-4210 for dates and times
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. Applications are due two months prior.
6. Due to limited space, all prerequisites and requirements must be completed prior to acceptance into the program.

Applicants with disabilities are encouraged to contact Disability Services 503-977-4341.

Students are prepared for job entry as a Fitness Technologist or specialist with opportunities for developing additional skills as a personal trainer or group exercise instructor. The program is designed to correlate classroom and laboratory experience with practical experience in fitness facilities in the community. During the course of study students are eligible to take the National Personal Trainer certifying examination given by the American College of Sports Medicine (ACSM), the National Strength and Conditioning Association (NSCA) or the American Council on Exercise (ACE). In addition, AAS graduates, at program completion, are eligible to take the Health and Fitness Instructor certifying examination given by ACSM.

Students requesting advanced placement or transfer credit from prior coursework must submit a written request to the Fitness Department. Transcripts and course descriptions for all coursework should be submitted with the request.

FITNESS TECHNOLOGY AAS DEGREE

Minimum 91 credit hours. 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.

Fitness Technology Degree Credit Summary
Fitness Technology Core Courses 37
Fitness Technology Degree Electives 12
Cooperative Education 8
Pro-Act 8
Remaining General Education 8
SP 4
FN 4
PSY 4
HPE 3
CG 2
PE 1
Credit Total 91
### 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>
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</thead>
<tbody>
<tr>
<td>FT 101</td>
<td>Fitness Technology Seminar</td>
<td>3</td>
</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention and Management</td>
<td>3</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure and Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>HPE 295</td>
<td>Health and Fitness for Life</td>
<td>3</td>
</tr>
<tr>
<td>PE 181A</td>
<td>Beginning Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking</td>
<td>4</td>
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<tr>
<td>PE 282A</td>
<td>Professional Activities-Aerobic Group Exercise</td>
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**Second Term**

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>FT 103</td>
<td>Nutrition for Fitness Instructors</td>
<td>3</td>
</tr>
<tr>
<td>FT 104</td>
<td>Fitness Assessment &amp; Programming I</td>
<td>3</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training</td>
<td>2</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations*</td>
<td>4</td>
</tr>
<tr>
<td>PE 287</td>
<td>Professional Activities-Aquatics*</td>
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</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FT 105</td>
<td>Fitness Assessment and Programming II</td>
<td>3</td>
</tr>
<tr>
<td>FT 107</td>
<td>Exercise Science I</td>
<td>3</td>
</tr>
<tr>
<td>PE 283</td>
<td>Professional Activities: Mind Body Disciplines</td>
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<tr>
<td></td>
<td>Mind/Body Option</td>
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<tr>
<td>PE 288</td>
<td>Professional Activities: Team Sports Training</td>
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<tr>
<td></td>
<td>Team Sports Option</td>
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<tr>
<td>FT 280</td>
<td>CE: Fitness Technology</td>
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**Fourth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>FT 203</td>
<td>Fitness Promotion</td>
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</tr>
<tr>
<td>FT 204</td>
<td>Exercise Science II</td>
<td>3</td>
</tr>
<tr>
<td>FN 225</td>
<td>Nutrition*</td>
<td>4</td>
</tr>
<tr>
<td>CG 280A</td>
<td>CE: Career Exploration</td>
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**Fifth Term**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FT 201</td>
<td>Fitness Assessment and Programming III</td>
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</tr>
<tr>
<td>FT 202</td>
<td>Exercise and Aging</td>
<td>3</td>
</tr>
<tr>
<td>CG 280A</td>
<td>CE: Career Exploration</td>
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**Sixth Term**

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<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>FT 280</td>
<td>CE: Fitness Technology</td>
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</table>

**Fitness Technology Certificate Credit Summary**

<table>
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<th>Course</th>
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<tbody>
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<td>FT</td>
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<tr>
<td>Pro-Act</td>
<td>6</td>
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<tr>
<td>SP</td>
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<tr>
<td>HPE</td>
<td>3</td>
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<tr>
<td>PE</td>
<td>1</td>
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</tbody>
</table>

**Healthy Older Adult Fitness: Career Pathway Certificate**

Minimum of 25 credit hours. The Healthy Older Adult Fitness Certificate is a Career Pathway. All courses within the certificate are contained in the Fitness Technology AAS Degree.

**First Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FT 101</td>
<td>Fitness Technology Seminar</td>
<td>3</td>
</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention and Management</td>
<td>3</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure and Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>HPE 295</td>
<td>Health and Fitness for Life</td>
<td>3</td>
</tr>
<tr>
<td>PE 181A</td>
<td>Beginning Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>PE 282A</td>
<td>Professional Activities: Group Fitness*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Aerobic Group Exercise Option</td>
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**Second Term**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>FT 103</td>
<td>Nutrition for Fitness Instructors</td>
<td>3</td>
</tr>
<tr>
<td>FT 104</td>
<td>Fitness Assessment &amp; Programming I</td>
<td>3</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training*</td>
<td>2</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations*</td>
<td>4</td>
</tr>
<tr>
<td>PE 287</td>
<td>Professional Activities: Aquatics*</td>
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</tr>
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</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>FT 105</td>
<td>Fitness Assessment and Programming II</td>
<td>3</td>
</tr>
<tr>
<td>FT 107</td>
<td>Exercise Science I</td>
<td>3</td>
</tr>
<tr>
<td>PE 283</td>
<td>Professional Activities: Mind Body Disciplines*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Mind/Body Option</td>
<td></td>
</tr>
<tr>
<td>PE 288</td>
<td>Professional Activities: Team Sports Training*</td>
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</tr>
<tr>
<td>FT 280</td>
<td>CE: Fitness Technology</td>
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</table>

**Fifth Term**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>FT 202</td>
<td>Exercise and Aging</td>
<td>3</td>
</tr>
<tr>
<td>FT 280A</td>
<td>CE: Fitness Technology</td>
<td>4</td>
</tr>
<tr>
<td>GRN 165</td>
<td>Basic Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>HPE 295</td>
<td>Health and Fitness for Life</td>
<td>3</td>
</tr>
<tr>
<td>PE 181A</td>
<td>Beginning Weight Training-Coed</td>
<td>1</td>
</tr>
<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training</td>
<td>2</td>
</tr>
<tr>
<td>PE 282A</td>
<td>Professional Activities: Aerobic Group Exercise</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>or Professional Activities: Mind Body Disciplines</td>
<td>1</td>
</tr>
<tr>
<td>PE 283</td>
<td>Professional Activities: Aquatics</td>
<td>1</td>
</tr>
<tr>
<td>PE Option</td>
<td>Professional Activities: Social Gerontology/Sociology of Aging</td>
<td>4</td>
</tr>
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</table>

**FITNESS TECHNOLOGY CERTIFICATE**

Minimum 47 credit hours. 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.
**Fitness Technology Degree Electives**

- GRN 165 Basic Activity Director Training 2
- SOC 223 Social Gerontology/Sociology of Aging 4
- Any approved PCC Course

**PE Options**

- **Aquatic Options:** GRN 165, 180A, 180B, 180C, 180F, 180G, 180H, 180K
- **Weight Training Options:** 181A, 181B, 181C, 181D, 181E
- **Aerobic Group Exercise 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
  - 503-977-4851
- Rock Creek Campus
  - Building 3, Room 201
  - 503-614-7235

**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.

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**GENERAL SCIENCE**

- Cascade Campus
  - Jackson Hall (JH), Room 210
  - 503-978-5209
- Rock Creek Campus
  - Building 7, Room 202
  - 503-614-7500
- Southeast Center
  - Mt Scott Hall (MSH), Room 103
  - 503-788-6146
- Sylvania Campus
  - Social Science Building (SS), Room 215
  - 503-977-4289

**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 and have no course specific prerequisites.

See the Course Description (GS prefix) section of this catalog for individual General Science courses and their prerequisites.

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**GEOGRAPHY**

- Cascade Campus
  - Terrell Hall (TH), Room 220
  - 503-978-5251
- Rock Creek Campus
  - Building 3, Room 201
  - 503-614-7327
- Southeast Center
  - Mt. Scott Hall (MSH), Room 103
  - 503-788-6147
- Sylvania Campus
  - Social Science Building (SS), Room 215
  - 503-977-4289

**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 their prerequisites.

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**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

See the Course Description (GEO prefix) section of this catalog for individual Geography courses and their prerequisites.
GEOGRAPHIC INFORMATION SYSTEMS CERTIFICATE

Minimum 44 credit hours. Students must meet all certificate requirements.

Geographic Information Systems Certificate Credit Summary
GIS Core Courses 28
GIS Certificate Electives 16
Credit Total 44

Geographic Information Systems Core Courses
GEO 105 Human Geography 4
GEO 106 Geography of the Developed World 4
GEO 107 Geography of the Developing World 4
GEO 265 Introduction to GIS 4
GEO 266 GIS Analysis 4
GEO 267 Application Topics in GIS 4
SP 111 Public Speaking 4

Electives
GIS Certificate Electives 16

Geographic Information Systems Certificate Electives
BI 145 Introduction to 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
HOR 290 Introduction to Landscape Design 3

The G 201, G 202, G 203 courses introduce students to the study of geology while preparing them for further study in the earth science field and include a lab component. 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 fieldtrips to introduce students to the regional geology of the Pacific Northwest. Geology courses can be taken individually or in any sequence and have no course specific prerequisites. 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
503-977-8002
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 to 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
503-977-8254 or 503-977-4077
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 Certificate: Career Pathway
Gerontology
Activity Assistant
Activity Director
Activity Consultant
End of Life Care and Support
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 credit hours. 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>Gerontology Core Courses</th>
<th>Credit Total 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology Program Electives</td>
<td>26</td>
</tr>
<tr>
<td>Cooperative Internship/Seminar</td>
<td>11</td>
</tr>
<tr>
<td>General Education</td>
<td>8</td>
</tr>
<tr>
<td>Gerontology CAS Electives</td>
<td>3</td>
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</tbody>
</table>

Gerontology Degree Credit Summary

Credit Total 90

<table>
<thead>
<tr>
<th>Electives, Remaining General Education and Cooperative Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerontology Program Electives</td>
</tr>
<tr>
<td>General Education</td>
</tr>
<tr>
<td>Gerontology CAS Electives</td>
</tr>
<tr>
<td>GRN 280A CE: Gerontology Internship</td>
</tr>
<tr>
<td>GRN 280B CE: Gerontology Professional-Seminar</td>
</tr>
</tbody>
</table>

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.

Gerontology Program Electives

In order to meet the credit minimum for the degree requirements, some courses may count toward electives or General Education, but not both.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>AD 101</td>
<td>Alcohol Use and Addiction</td>
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<tr>
<td>AD 102</td>
<td>Drug Use and Addiction</td>
<td>3</td>
</tr>
<tr>
<td>AD 154</td>
<td>Client Record Management and Addiction</td>
<td>3</td>
</tr>
<tr>
<td>AD 156</td>
<td>Ethical and Professional Issues</td>
<td>3</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention and Management</td>
<td>3</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>FT 202</td>
<td>Fitness and Aging</td>
<td>3</td>
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<tr>
<td>GRN 131</td>
<td>Hospice Basics</td>
<td>1</td>
</tr>
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<td>GRN 165</td>
<td>Basic Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 170</td>
<td>Resident Assistant I Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 171</td>
<td>Resident Assistant II Training</td>
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<tr>
<td>GRN 233</td>
<td>Supporting End of Life</td>
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</tr>
<tr>
<td>GRN 235</td>
<td>Advanced Care Issues</td>
<td>2</td>
</tr>
<tr>
<td>GRN 236</td>
<td>Advanced Care Practice</td>
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</tr>
<tr>
<td>GRN 237</td>
<td>End of Life Therapies</td>
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<td>GRN 238</td>
<td>Guardian Conservator Training</td>
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<tr>
<td>GRN 240</td>
<td>Care and Service Coordination</td>
<td>3</td>
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<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 267</td>
<td>Introduction to Professional Therapeutic Horticulture</td>
<td>2</td>
</tr>
<tr>
<td>GRN 268</td>
<td>Techniques &amp; Adaptive Strategies in Therapeutic Horticulture</td>
<td>2</td>
</tr>
</tbody>
</table>
GRN 269 Therapeutic Horticulture Skills I 2
GRN 270 Therapeutic Horticulture Programming for Adults & Children 2
GRN 271 Therapeutic Horticulture Skills II 2
GRN 272 Therapeutic Garden Design Maintenance & Programming 3
HE 212 Women’s Health 4
HE 213 Men’s Health 4
HE 242 Stress and Human Health 4
HE 250 Personal Health 3
HE 251 Community and Public Health Issues 4
HE 252 First Aid: Basic and Beyond 4
HPE 295 Health and Fitness for Life 3
MP 111 Medical Terminology 4
PSY 101 Psychology and Human Relations 4
PSY 201 Introduction to Psychology Part I 4
PSY 202 Introduction to Psychology Part II 4
PSY 214 Introduction to Personality 4
PSY 215 Human Development 4
PSY 222 Family & Intimate Relationships 4
PSY 231 Human Sexuality 4
PSY 232 Human Sexuality 4
SOC 205 General Sociology: Social Change & Social Institutions 4
SOC 206 General Sociology: Social Problems 4
SOC 218 Sociology of Gender 4

Gerontology CAS Electives
CAS 133 Basic Computer Skills/Microsoft Office1 4
CAS 140 Beginning Access1 3
CAS 170 Beginning Excel1 3
CAS 216 Beginning Word1 3
CAS 217 Intermediate Word1 3
CAS 231 Publisher1 3

GERONTOLOGY: CAREER PATHWAY CERTIFICATE
Minimum 43 credit hours. The Gerontology Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.
GRN 165 Basic Activity Director Training 2
GRN 165 Basic Activity Director Training 2
GRN 181 Exploring the Field of Aging 2
GRN 265 Activity Professional Training I 3
GRN 280A CE: Gerontology Internship1 4
GRN 280B Gerontology Internship Seminar 1
GRN 282 Gerontology Professional Seminar 1
HE 250 Personal Health 3

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 credit hours. The Gerontology Activity Director Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.
GRN 165 Basic Activity Director Training 2
GRN 181 Exploring the Field of Aging 2
GRN 265 Activity Professional Training I 3
GRN 266 Activity Professional Training II 3
GRN 280A CE: Gerontology Internship* 5
GRN 280B Gerontology Internship Seminar 1
GRN 282 Gerontology Professional Seminar 1
HE 250 Personal Health 3

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.

1 This requirement can be met through proof of comparable, work-based computer skills training.

ACTIVITY CONSULTANT: CAREER PATHWAY CERTIFICATE
Minimum 21 credit hours. The Gerontology Activity Consultant Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.
GRN 165 Basic Activity Director Training 2
GRN 181 Exploring the Field of Aging 2
GRN 265 Activity Professional Training I 3
GRN 266 Activity Professional Training II 3
GRN 280A CE: Gerontology Internship* 4
GRN 282 Gerontology Professional Seminar 1
SOC 223 Social Gerontology/Sociology of Aging 4
SOC 230 Introduction to Gerontology 4

ADVANCED BEHAVIORAL & COGNITIVE CARE: CAREER PATHWAY CERTIFICATE
Minimum 30 credit hours. The Gerontology Advanced Behavioral & Cognitive Care Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.
AD 105 Aging and Addiction 3
GRN 181 Exploring the Field of Aging 2
GRN 235 Advanced Care Issues 2
GRN 236 Advanced Care Practice 2
GRN 240 Care and Service Coordination 3
GRN 280A CE: Gerontology Internship 4
GRN 280B Internship Seminar 1
GRN 282 Gerontology Professional Seminar 1

1 This requirement can be met through proof of comparable, work-based computer skills training.
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.

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 during the spring term. 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.

GRAPHIC DESIGN AAS DEGREE

Minimum 97 credit hours. 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 Summary

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GD</td>
<td>58</td>
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<tr>
<td>ART</td>
<td>13</td>
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<tr>
<td>Remaining General Education</td>
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<td>WR</td>
<td>4</td>
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<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>3</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>97</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.

Graphic Design Degree Summary

GD 58
ART 13
Remaining General Education 8
WR 4
SP 4
BA 3
CAS 3
MTH 4

Credit Total 97
**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>GD 120</td>
<td>Graphic Design I</td>
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<tr>
<td>ART 131</td>
<td>Drawing*</td>
<td>3</td>
</tr>
<tr>
<td>GD 101</td>
<td>Macintosh for Graphic Designers</td>
<td>1</td>
</tr>
<tr>
<td>GD 114</td>
<td>Introductory Typography</td>
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</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
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</tbody>
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General Education 4

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GD 122</td>
<td>Graphic Design II</td>
<td>3</td>
</tr>
<tr>
<td>SP 111</td>
<td>Public Speaking*</td>
<td>4</td>
</tr>
<tr>
<td>GD 140</td>
<td>Digital Page Design I</td>
<td>3</td>
</tr>
<tr>
<td>GD 116</td>
<td>Intermediate Typography</td>
<td>3</td>
</tr>
<tr>
<td>GD 150</td>
<td>Digital Illustration I</td>
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</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 124</td>
<td>Graphic Design III</td>
<td>3</td>
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<tr>
<td>GD 151</td>
<td>Digital Illustration II</td>
<td>3</td>
</tr>
<tr>
<td>ART 103</td>
<td>Introduction to Art*</td>
<td>4</td>
</tr>
<tr>
<td>GD 141</td>
<td>Digital Page Design II</td>
<td>3</td>
</tr>
<tr>
<td>GD 160</td>
<td>Digital Imaging I</td>
<td>3</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 260</td>
<td>Digital Imaging II</td>
<td>3</td>
</tr>
<tr>
<td>GD 244</td>
<td>Preparing Files for Print</td>
<td>3</td>
</tr>
<tr>
<td>GD 221</td>
<td>Graphic Design IV</td>
<td>3</td>
</tr>
<tr>
<td>GD 249</td>
<td>Graphic Design Studio</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>GD 280A</td>
<td>CE: Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>ART 231</td>
<td>Drawing*</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 222</td>
<td>Graphic Design V</td>
<td>3</td>
</tr>
<tr>
<td>GD 239</td>
<td>Illustration for Graphic Designers</td>
<td>3</td>
</tr>
<tr>
<td>GD 242</td>
<td>Combined Graphic Programs</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Web Site Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>GD 228</td>
<td>Professional Graphic Design Practices</td>
<td>3</td>
</tr>
</tbody>
</table>

**Sixth Term**

All General Education courses must be completed by end of this term.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 229</td>
<td>Portfolio Preparation</td>
<td>3</td>
</tr>
<tr>
<td>ART 237</td>
<td>Life Drawing*</td>
<td>3</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MTH 65</td>
<td>Introductory Algebra</td>
<td>4</td>
</tr>
</tbody>
</table>

General Education 4

*Could be used as General Education

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
503-978-5076

Rock Creek Campus
Building 3, Room 207
503-614-7082

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Sylvania Campus
Health Technology Building (HT), Room 305
503-977-4225

**DESCRIPTION**

Health is that condition of the individual that makes possible the highest enjoyment of life, the greatest constructive work, and that shows itself in the best service to the world. Health explores and examines the well-being of the individual and community from a multi-dimensional perspective.

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, children’s, men’s, and women’s health, and first aid. 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
503-978-5667

**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 credit hours. 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM</td>
<td>76</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credit</strong></td>
<td><strong>96</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>HIM 110 Health Information Technology I</td>
<td>4</td>
</tr>
<tr>
<td>HIM 120 Health Information Technology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>HIM 182 Health Care Delivery Systems</td>
<td>3</td>
</tr>
<tr>
<td>HIM 128 Anatomy &amp; Physiology for HIM</td>
<td>4</td>
</tr>
<tr>
<td>WR 121 English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 105 Ancillary Information Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HIM 107 Ancillary Information Analysis Lab</td>
<td>1</td>
</tr>
<tr>
<td>HIM 121 Legal &amp; Ethical Aspects of Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIM 129 Anatomy &amp; Physiology for HIM II</td>
<td>4</td>
</tr>
<tr>
<td><strong>General Education</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 131 Medical Science</td>
<td>5</td>
</tr>
<tr>
<td>HIM 136 Medications</td>
<td>3</td>
</tr>
<tr>
<td>SP 100 Introduction to Speech Communication*</td>
<td>4</td>
</tr>
<tr>
<td><strong>General Education</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 141 Health Information Technology II</td>
<td>3</td>
</tr>
<tr>
<td>HIM 275 Classification Systems III</td>
<td>3</td>
</tr>
<tr>
<td>HIM 281 Data Management and Analysis I</td>
<td>2</td>
</tr>
<tr>
<td>HIM 283 Health Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>HIM 292 Health Information Directed Practice I</td>
<td>1</td>
</tr>
</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 270 Classification Systems I</td>
<td>4</td>
</tr>
<tr>
<td>HIM 285 Healthcare Financing/Compliance</td>
<td>3</td>
</tr>
<tr>
<td>HIM 271 Quality Improvements in Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIM 274 Quality Improvement in Healthcare Lab</td>
<td>1</td>
</tr>
<tr>
<td>HIM 282 Data Management &amp; Analysis II</td>
<td>3</td>
</tr>
<tr>
<td><strong>General Education</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 273 Classification Systems II</td>
<td>4</td>
</tr>
<tr>
<td>HIM 276 Classifications Systems Lab</td>
<td>2</td>
</tr>
<tr>
<td>HIM 290 Health Information Technology III</td>
<td>3</td>
</tr>
<tr>
<td>HIM 272 Health Information Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM 277 Health Information Management Lab</td>
<td>2</td>
</tr>
<tr>
<td>HIM 293 Health Information Directed Practice II</td>
<td>1</td>
</tr>
</tbody>
</table>

*Could be as General Education.

HISTORY

Cascade Campus
Terrell Hall (TH), Room 220
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7248

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Sylvania Campus
Social Science Building (SS), Room 215
503-977-4299

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 affect 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, professional writers and a host of other occupations that require critical thinking, research and writing skills.

The PCC history program 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)
503-978-5009 or 503-977-4081

**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 who have similar 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 an introductory course 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
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7235

**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 & Technology Building (ST), Room 208
503-977-4166, 503-977-4030

www.pcc.edu/programs/interior-design

**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, equipping, and furnishing of residential interior spaces. Specializations within the program of study also include Kitchen & Bath Design and Sustainable Building Design.

**DEGREE AND CERTIFICATES OFFERED**

Associate of Applied Science Degree
Interior Design

Two-Year Certificate
Kitchen and Bath

Less than One-Year Certificate
Interior Furnishings
Sustainable Building

**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.

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.

**INTERIOR DESIGN AAS DEGREE**

Minimum 103 credit hours. 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>42</td>
</tr>
<tr>
<td>ARCH</td>
<td>25</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>9</td>
</tr>
<tr>
<td>ART</td>
<td>6</td>
</tr>
<tr>
<td>ID Degree Electives</td>
<td>6</td>
</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>BA</td>
<td>3</td>
</tr>
</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.

**First Term**
- ARCH 110 Introduction to Architectural Drawing 2
- ID 131 Introduction to Interiors 3
- ART 131 Introduction to Drawing* 3
- General Education 4
- MTH 65 Introductory Algebra 4

**Second Term**
- ID 125 Computer Drafting for Interior Designers 3
- ARCH 100 Graphic Communication for Designers 3
- ARCH 124 Introduction to Building Systems 3
- ID 120 Interior Products and Materials I 3
- WR 121 English Composition 4

**Third Term**
- ID 236 Lighting Design 3
- ID 132 Planning Interiors 3
- ARCH 200 Principles of Architectural Design 4
- SP 130 Business & Professional Speech Communication* 4
- SP 111 Public Speaking* 4

**Fourth Term**
- ID 133 Space Planning and Design 3
- ID 138 Introduction to Kitchen and Bath Planning 3
- ID 230 Textiles for Interiors 3
- ARCH 101 Architecture Graphics I 3
- ARCH 132 Residential Building Codes 2
- ID 122 History of Furniture-Ancient to 1800 3

**Fifth Term**
- ART 215 History of American Res Architecture 3
- ID 135 Professional Practices for Designers 3
- ARCH 111 Working Drawings I 3
- ID 121 Sustainable Materials for Residential Interiors 3
- ID 123 History of Furniture-1800 to Present 3
- ARCH 121 Structural Systems I 2
- ARCH 127 Introduction to Goggle Sketch-Up 3
- ID Degree Electives 3

**Sixth Term**
- ID 234 Advanced Interiors 3
- ID 240 Interior Design Internship 3
- BA 238 Sales 3
- General Education 5
- ID Degree Electives 3

*Could be used as General Education

### Interior Design Degree Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART</td>
<td>115 Basic Design 3</td>
</tr>
<tr>
<td>ART</td>
<td>116 Basic Design 3</td>
</tr>
<tr>
<td>BCT</td>
<td>244 Kitchen and Bath Cabinet Installation 2</td>
</tr>
<tr>
<td>ID</td>
<td>225 CAD for Kitchen and Bath Design 1</td>
</tr>
<tr>
<td>ID</td>
<td>238 Advanced Kitchen and Bath Planning 3</td>
</tr>
<tr>
<td>ID 280A CE</td>
<td>Kitchen and Bath varied</td>
</tr>
</tbody>
</table>

### KITCHEN AND BATH CERTIFICATE

Minimum 62 credit hours. 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 Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>31</td>
</tr>
<tr>
<td>ARCH</td>
<td>15</td>
</tr>
<tr>
<td>BCT</td>
<td>2</td>
</tr>
<tr>
<td>BA</td>
<td>3</td>
</tr>
<tr>
<td>ART</td>
<td>3</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
</tbody>
</table>

**Credit Total**: 62

### 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 3
- ID 125 Computer Drafting for Interior Designers 3
- ID 131 Introduction to Interiors 3

**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
- WR 121 English Composition (or higher) 4

**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**
- ARCH 111 Working Drawings I 3
- ARCH 121 Structural Systems I 2
- ARCH 132 Residential Building Code 2
- ART 215 History of American Residential Architecture 3
- BA 238 Sales 3
- ID 280A CE: Kitchen and Bath 3
- MTH 65 Introductory Algebra (or higher) 4
SUSTAINABLE BUILDING CERTIFICATE
Minimum 42 credit hours. Students must also meet comprehensive certificate requirements.

Sustainable Building Certificate Summary
ARCH 24
ESR 4
PHL 4
SOC 4
BCT 3
ID 3
Credit Total 42

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

First Term
ARCH 101 Arch Graphics I 3
ARCH 124 Introduction to Building Systems 3
ARCH 131 Sustainable Building Strategies 4
ESR 171 Environmental Science 4
or
ESR 172 Environmental Science 4

Second Term
ARCH 224 Passive & Active Bldg Systems 4
BCT 206 Sustainable Const. Practices 3
ID 121 Sustainable Materials for Res Interiors 3
PHL 206 Environmental Ethics 4

Third Term
ARCH 113 Site Planning 2
ARCH 204 Green Residential Studio 4
ARCH 280 CE: Arch Drafting 4
SOC 228 Environmental Sociology 4

INTERIOR FURNISHINGS CERTIFICATE
Minimum 41 credit hours. Students must also meet comprehensive certificate requirements. The Interior Furnishings Certificate is a related certificate. All courses within the certificate are in the Interior Design AAS Degree.

Interior Furnishings Certificate Summary
ID 27
ARCH 8
ART 3
BA 3
Credit Total 41

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
ID 131 Introduction to Interiors 3
ART 131 Introduction to Drawing 3
ARCH 124 Introduction to Building Systems 3
ID 122 History of Furniture- Ancient to 1800 3

Second Term
ARCH 100 Graphic Communication for Designers 3
BA 238 Sales 3
ID 120 Interior Products and Materials I 3
ID 123 History of Furniture- 1880 to Present 3
ID 132 Planning Interiors 3

Third Term
ID 121 Sustainable Materials for Residential Interiors 3
ID 133 Space Planning 3
ID 135 Professional Practices for Designers 3
ID 230 Textiles for Interiors 3

JAPANESE
Rock Creek Campus
Building 3, Room 201
503-614-7235
Sylvania Campus
Communications Technology Building (CT), Room 219
503-977-8005
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 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
503-977-4264

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
503-614-7500
www.pcc.edu/programs/landscape-tech

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 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 credit hours 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 construction 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.

DEGREE AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Landscape Technology

Two-Year Certificate
Landscape Construction
Landscape Management
Landscape Design

Less than One-Year Certificate
Landscape Service Technician

PREREQUISITES AND REQUIREMENTS

All degree and two year certificate 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.

Exit Requirement: All two year certificate applicants must have completed MTH 60; transferred a math level equivalent to, or higher than, MTH 60 from a prior degree, or placement into MTH 65.

All Landscape Technology courses must be completed with a C or better to meet the requirements for graduation.
LANDSCAPE TECHNOLOGY AAS DEGREE

Minimum 96 credit hours. 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.

Landscape Technology Degree Credit Summary
LAT Degree Core Courses 68
General Education 16
LAT Degree Electives 12
Credit Total 96

Landscape Technology Degree Core Courses
CSS 200 Soils and Plant Nutrition 3
HOR 226 Plant Materials - Deciduous 4
HOR 227 Plant Materials - Evergreen 4
HOR 228 Plant Materials - Flowering 4
HOR 255 Spring Annuals and Perennials or 3
HOR 272 Summer Annuals and Perennials 3
HOR 290 Introduction to Landscape Design 3
LAT 104 Pesticides 3
LAT 106 Basic Horticulture 4
LAT 108 Landscape Irrigation I 3
LAT 109 Plant Propagation 3
LAT 110 Grounds Maintenance 4
LAT 111 Landscape Construction Practices 3
LAT 217 Landscape Drafting 3
LAT 223 Site Surveying and Analysis 3
LAT 232 Landscape Irrigation II 4
LAT 236 Landscape Math 3
LAT 241 Turfgrass Cultural Practices 3
LAT 243 Landscape Business Operations 3
LAT 264 Landscape Estimating and Bidding 3
LAT 280A CE: Landscape 6

Students with one year documented work experience in landscape construction may take an additional 6 credit hours of LAT elective courses in lieu of cooperative work experience. Arrange with a landscape advisor.

Electives and Remaining General Education
General Education 16
LAT Degree Electives 12

LANDSCAPE DESIGN CERTIFICATE

Minimum 84 credit hours. Students must meet certificate requirements.

Landscape Design Certificate Credit Summary
LAT Design Core Courses 69
LAT Design Electives 6
Related Instruction 6
Cooperative Education 3
Credit Total 84

LANDSCAPE CONSTRUCTION CERTIFICATE

Minimum 78 credit hours. Students must meet certificate requirements.

Landscape Construction Certificate Credit Summary
LAT Const Core Courses 60
Cooperative Education 6
LAT Construction Electives 6
Related Instruction 6
Credit Total 78

Landscape Construction Core Courses
CSS 200 Soils and Plant Nutrition 3
HOR 226 Plant Materials - Deciduous 4
HOR 227 Plant Materials - Evergreen 4
HOR 228 Plant Materials - Flowering 4
HOR 290 Introduction to Landscape Design 3
LAT 104 Pesticides 3
LAT 106 Basic Horticulture 4
LAT 108 Landscape Irrigation I 3
LAT 110 Grounds Maintenance 4
LAT 111 Landscape Construction Practices 3
LAT 217 Landscape Drafting 3
LAT 223 Site Surveying and Analysis 3
LAT 232 Landscape Irrigation II 4
LAT 236 Landscape Math 3
LAT 241 Turfgrass Cultural Practices 3
LAT 243 Landscape Business Operations 3
LAT 264 Landscape Estimating and Bidding 3
MSD 101 Principles of Management and Supervision 3

Students should consult with program advisor for a list of approved courses to be used for Related Instruction.

Electives, Related Instruction and Cooperative Education
Related Instruction Human Relations 3
Related Instruction Communication 3
LAT Construction Electives 6
LAT280ACE: Landscape 6

Landscape Construction Certificate Electives
HOR 255 Spring Annuals and Perennials 3
HOR 272 Summer Annuals and Perennials 3
HOR 291 Landscape Design Process 3
LAT 109 Plant Propagation 3
LAT 214 Plant Composition I 3
LAT 219 Landscape Illustration 3
LAT 225 Water Gardens 2
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 Landscape Night Lighting 3
LAT 278 Oregon LCP Examination Preparation 3

Students with one year documented work experience in landscape construction may take an additional 6 credit hours of LAT elective courses in lieu of cooperative work experience. Arrange with a landscape advisor.

1 Students with one year documented work experience may take an additional 6 credit hours of General Education or landscape electives in place of cooperative work experience. Arrange with a landscape advisor.

2 Students should consult with program advisor for a list of approved courses to be used for Related Instruction.

LANDSCAPE DESIGN CERTIFICATE

Minimum 84 credit hours. Students must meet all certificate requirements.

Landscape Design Certificate Credit Summary
LAT Design Cert Core Courses 69
LAT Design Electives 6
Related Instruction 6
Cooperative Education 3
Credit Total 84
# Landscape Design Core Courses

<table>
<thead>
<tr>
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# Core Courses

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# Electives, Related Instruction and Cooperative Education

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<tbody>
<tr>
<td>LAT 104</td>
<td>Pesticides</td>
<td>3</td>
</tr>
<tr>
<td>LAT 225</td>
<td>Water Gardens</td>
<td>2</td>
</tr>
<tr>
<td>LAT 235</td>
<td>Tree Care-Fall</td>
<td>3</td>
</tr>
<tr>
<td>LAT 240</td>
<td>Tree Care-Spring</td>
<td>3</td>
</tr>
<tr>
<td>LAT 241</td>
<td>Turfgrass Cultural Practices</td>
<td>3</td>
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<td>LAT 250</td>
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</tr>
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<td>LAT 275</td>
<td>Introduction to Landscape Night Lighting</td>
<td>3</td>
</tr>
<tr>
<td>LAT 278</td>
<td>Oregon LCP Examination Preparation</td>
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# Landscape Management Certificate Electives

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>Summer Annuals and Perennials</td>
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<td>HOR 290</td>
<td>Introduction to Landscape Design</td>
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<td>Pesticides</td>
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</tr>
<tr>
<td>LAT 106</td>
<td>Basic Horticulture</td>
<td>4</td>
</tr>
<tr>
<td>LAT 108</td>
<td>Landscape Irrigation I</td>
<td>3</td>
</tr>
<tr>
<td>LAT 109</td>
<td>Plant Propagation</td>
<td>4</td>
</tr>
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<td>LAT 111</td>
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</tr>
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<td>LAT 223</td>
<td>Site Surveying and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>LAT 235</td>
<td>Tree Care - Fall</td>
<td>3</td>
</tr>
<tr>
<td>LAT 236</td>
<td>Landscape Math</td>
<td>3</td>
</tr>
<tr>
<td>LAT 240</td>
<td>Tree Care - Spring</td>
<td>3</td>
</tr>
<tr>
<td>LAT 241</td>
<td>Turfgrass Cultural Practices</td>
<td>3</td>
</tr>
<tr>
<td>LAT 243</td>
<td>Landscape Business Operations</td>
<td>3</td>
</tr>
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<td>LAT 250</td>
<td>Plant Disease, Insects and Weed Identification</td>
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# Landscape Management Certificate Core Courses

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<td>Basic Horticulture</td>
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</tr>
</tbody>
</table>

# Landscape Management Certificate Credit Summary

- LAT Management Core Courses: 41
- LAT Management Electives: 6
- Related Instruction: 6
- Cooperative Education: 6
- Credit Total: 53

# Landscape Management Certificate Core Courses

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# Landscape Service Technician Certificate Core Courses

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<tr>
<td>HOR 290</td>
<td>Introduction to Landscape Design</td>
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<td>LAT 104</td>
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</table>
LAT 108 Landscape Irrigation I 3
LAT 109 Plant Propagation 3
LAT 110 Grounds Maintenance 4
LAT 111 Landscape Construction Practices 3
LAT 236 Landscape Math 3

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.

Machine Manufacturing Technology

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 perform equally well on several different machines.

The Machine Manufacturing Technology program has been developed specifically as open entry and open exit (OEOE.) The program is designed to fit the needs of a student (take as few or as many modules as desired), and have the following characteristics: open entry (enter 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. Many of the machine manufacturing courses are now available in a distance learning format.

Degree 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 credit hours. 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 Summary
MCH 62
MCH Degree Electives 28
General Education 16
Credit Total 106

Course of Study

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

First Term
MCH 100 Machine Tool Basics 1
MCH 105 Blueprint Reading I 1.5
MCH 110 Blueprint Reading II 1.5

www.pcc.edu/programs/literature/
www.pcc.edu/programs/machine-manufacturing/
Portland Community College • 2010–2011

Programs and Disciplines

MCH 120 Machine Shop Math 2
MCH 125 Speeds & Feeds 1
MCH 135 Basic Measuring Tools 1.5
MCH 145 Layout Tool 1.5
MCH 150 Precision Measuring Tools 1.5
MCH 160 Drilling Machines & Operations 2
MCH Degree Electives 1.5

Second Term
General Education 4
MCH 115 Geometric Dimensioning and Tolerancing 3.5
MCH 130 Machine Shop Trigonometry 2.5
MCH 175 Band Saws 1
MCH 180 Turning Machine & Operations 4
MCH 190 Boring on Lathe 1
MCH 195 Threading on Lathe 3

Third Term
General Education 4
MCH Degree Electives 7.5
MCH 205 Vertical Milling Machine 3.5
MCH 225 Surface Grinding Machine and Operations 2

Fourth Term
General Education 4
MCH 259 CNC Programming- Lathe 5
MCH 268 CNC Programming- Mill 5
MCH 278 CNC Operations- Mill 4

Fifth Term
General Education 4
MCH 272 Mastercam I 5
MCH 273 Mastercam II 5
MCH 279 CNC Operations- Lathe 4

Sixth Term
MCH Degree Electives 19

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

CNC TURNING – ONE-YEAR CERTIFICATE

Minimum 45.5 credit hours. Students must meet all certificate requirements.

CNC Turning Certificate Credit Summary
MCH 45.5
Credit Total 45.5

COURSE OF STUDY

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

First Term
MCH 100 Machine Tool Basics 1
MCH 105 Blueprint Reading I 1.5
MCH 110 Blueprint Reading II 1.5
MCH 115 Geometric Dimensioning & 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

Second Term
MCH 145 Layout Tools 1.5
MCH 150 Precision Measuring Tools 1.5
MCH 158 Project Machine Technology II 3
MCH 180 Turning Machines & Operations 4
MCH 259 CNC Programming-Lathe 5

Third Term
MCH 121 Manufacturing Processes I 4
MCH 190 Boring on the Lathe 1
MCH 195 Threading on the Lathe 3
MCH 279 CNC Operation-Lathe 4

CNC MILLING – ONE-YEAR CERTIFICATE

Minimum 46 credit hours. Students must meet all certificate requirements. The CNC Milling Certificate is a related certificate. All courses within the certificate are contained in the Machine Manufacturing Technology AAS Degree.

CNC Milling Certificate Credit Summary
MCH 46
Credit Total 46
COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- MCH 100 Machine Tool Basics 1
- MCH 105 Blueprint Reading I 1.5
- MCH 110 Blueprint Reading II 1.5
- MCH 115 Geometric Dimensioning & 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

Second Term
- MCH 121 Manufacturing Processes I 4
- 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

Third Term
- MCH 272 Mastercam Level I 5
- MCH 278 CNC Operation-Mill 4
- MCH 280 CE: Machine Technology 4

MANUFACTURING TECHNICIAN:
CAREER PATHWAY CERTIFICATE
Minimum 25.5 credit hours. Students must meet all certificate requirements. The Manufacturing Technician Certificate is a Career Pathway. All courses within the certificate are contained in the Machine Manufacturing Technology AAS Degree.

MCH 100 Machine Tool Basics 1
MCH 105 Blueprint Reading I 1.5
MCH 110 Blueprint Reading II 1.5
MCH 115 Geometric Dimensioning & 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 Tools 1.5
MCH 150 Precision Measuring Tools 1.5
MCH 280 CE: Machine Technology 4

MANAGEMENT/SUPERVISORY DEVELOPMENT
Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146, 503-788-6148
Willow Creek Center, Room 307
503-533-2955
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 skills and knowledge. Interacting with instructors who are currently practicing managers or consultants, participants develop cutting-edge professional skills that will prepare them for future success in private or public sector management and supervisory careers.

Bachelor degree articulation agreements are in place with Marylhurst and Warner Pacific as well as other area colleges and universities. 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 throughout the PCC District. Most courses are offered on campus in the evenings, on Saturdays, and through distance learning. The entire degree is available online. Consult your program advisor to find out whether you are eligible to earn PCC credit for formal training at non-accredited institutions.


DEGREES AND CERTIFICATE 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
ASSOCIATE OF APPLIED SCIENCE DEGREE
Minimum 90 credit hours. 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 Core Courses 26
MSD Support Electives 26
MSD Program/Workshop Electives 26
Remaining General Education 12
Credit Total 90

Management/Supervisory Core Courses
- BA 211 Principles of Accounting I 3
- CIS 120 Computer Concepts I* 4
- MSD 101 Principles of MGMT/SUP 3
- MSD 105 Interpersonal Communication 3
- MSD 111 Corresponding Effectively at Work 3
- MSD 115 Improving Work Relations 3
- MSD 222 Human Resources Mgmt: Personnel 3
- MSD 216 Budgeting for Managers 3
- BA 177 Payroll Accounting 3
- BA 213 Principles of Accounting III 3
- WR 121 English Composition 4

*Could be used as General Education
**Electives and Remaining General Education**
Remaining General Education 12

**MANAGEMENT/SUPERVISORY DEVELOPMENT CERTIFICATE**
Minimum 45 credit hours. Students must meet all certificate requirements.

**Management/Supervisory Certificate Credit Summary**
- MSD Core Courses: 26
- MSD Program/Workshop Electives: 19
- Credit Total: 45

**Management/Supervisory Certificate Core Courses**
- **BA 211** Principles of Accounting I 3
- **CIS 120** Computer Concepts I* 4
- **MSD 101** Principles of MGMT/SUP 3
- **MSD 105** Interpersonal Communication 3
- **MSD 111** Corresponding Effectively at Work 3
- **MSD 115** Improving Work Relations 3
- **MSD 222** Human Resources Mgmt: Personnel 3
- **MSD 216** Budgeting for Managers 3
- **BA 177** Payroll Accounting 3
- **BA 213** Principles of Accounting III 3
- **WR 121** English Composition 4
- **MSD 107** Organizations & People 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 202** Training the Employee 3
- **MSD 206** The Troubled Employee 3
- **MSD 223** Human Resource Management: Performance and Compensation 3
- **MSD 279** Project Management - Intro 4
- **MSD 280A** CE: Mgmt/ Supervisory Development 3
- **MSD 280B** CE: Mgmt/Supervisory Development- Seminar 1
- **MSD 298** Trends in Management and Supervision 1

Note: Career technical areas: See MSD advisor for qualifying elective course selection in career technical areas.

**Management/Supervisory Support Electives**
- **BA 101** Introduction to Business 4
- **BA 111** Introduction to Accounting 3
- **BA 131** Computers in Business 4
- **BA 203** Introduction to International Business 3
- **BA 205** Solving Communication Problems with Technology 4
- **BA 212** Principles of Accounting II 3
- **BA 223** Principles of Marketing 3
- **BA 226** Business Law I 4
- **BA 238** Sales 3
- **BA 255** Project Management- Business Environments 4
- **BA 270** Global Business Management 3
- **CAS 103** Introduction to Windows 1
- **CAS 109** Beginning PowerPoint 1
- **CAS 133** Basic Computer Skills/Microsoft Office 4
- **CAS 170** Beginning Excel 3
- **CAS 216** Beginning Word 3
- **CAS 216A** Beginning Word 1
- **CAS 220** Project Management- Beginning MS Project 3
- **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
- **CIS 121** Computer Concepts II* 4
- **CIS 178** Applied Internet Concepts 4
- **CIS 185** Computer and Ethics 3
- **CIS 245** Project Management- Information Systems 4
- **EC 201** Principles of Economics: Microeconomics 4
- **EC 202** Principles of Economics: Macroeconomics 4
- **HE 112** First Aid and Emergency Care 1
- **HE 125** First Aid and Industrial Safety 3
- **HE 242** Stress and Human Health 4
- **PE 182A** Beginning Group Fitness 1

*Could be used as General Education

**Management/Supervisory Program Electives**
- **MSD 107** Organizations & People 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 202** Training the Employee 3
- **MSD 206** The Troubled Employee 3
- **MSD 223** Human Resource Management: Performance and Compensation 3
- **MSD 279** Project Management - Intro 4
- **MSD 280A** CE: Mgmt/ Supervisory Development 3
- **MSD 280B** CE: Mgmt/Supervisory Development - Seminar 1
- **MSD 298** Trends in Management and Supervision 1
- **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 123** Job Search Strategies 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
- **MSD 174** Time Management 1
- **MSD 174B** Leadership & 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

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 credit hours of management/supervisory development courses are required: 6 credit hours of core courses, MSD 101, and MSD 111, MSD 105 and MSD 206 and 6 credit hours from other MSD offerings.

CHANGE/INNOVATION MANAGEMENT
Minimum of 18 credit hours to include MSD 101,121,130,116,133 and 7 other MSD credits.

CONFLICT MANAGEMENT
Minimum of 18 credit hours to include MSD 105, 130, 206, 157 and 8 additional MSD credits.

LEADERSHIP
Minimum of 18 credit hours to include MSD 101, 105,107, MSD 121 and 6 additional MSD credits.

PROJECT MANAGEMENT
Minimum of 18 credit hours to include MSD 101,121,174,177, 279, BA 255 (recommended) and 2 additional MSD credits.

CUSTOMER SERVICE MANAGEMENT
Minimum of 18 credit hours to include MSD 105,115,116,117,151 and 7 additional MSD credits.

HUMAN RESOURCE MANAGEMENT
Minimum of 18 credit hours to include MSD 105, 222, 223,115, and 6 additional MSD credits.

MATHEMATICS

Cascade Campus
Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251

Rock Creek Campus
Building 2, Room 230
503-614-7606

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Sylvania Campus
Science Technology Building (ST), Room 104
503-977-4172

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 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
503-977-4163

www.pcc.edu/programs/mechanical-engineering

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 technical 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.

DEGREE AND CERTIFICATE 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 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 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.

MECHANICAL ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 101 credit hours. 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>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110 Statics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 111 Engineering Technology Orientation</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112 Technical Algebra and Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>CMET 113 Engineering Technology Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CMET 121 Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122 Technical Engineering Physics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123 Technical Algebra with Analytic Geometry</td>
<td>4</td>
</tr>
<tr>
<td>CH 104 General Chemistry*</td>
<td>5</td>
</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>CMET 131 Applied Calculus</td>
<td>8</td>
</tr>
<tr>
<td>CMET 227 Applied Electricity Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>WR 121 English Composition</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>CMET 280A Cooperative Education, available any term after completing term three (optional)</td>
<td></td>
</tr>
<tr>
<td>Fourth Term</td>
<td></td>
</tr>
<tr>
<td>CMET 226 Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CMET 133 Materials Technology</td>
<td>3</td>
</tr>
<tr>
<td>CMET 221 Environmental Systems</td>
<td>4</td>
</tr>
<tr>
<td>CMET 213 Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>SP 100 Intro to Speech Communication*</td>
<td>4</td>
</tr>
<tr>
<td>or SP 111 Public Speaking*</td>
<td>4</td>
</tr>
<tr>
<td>Fifth Term</td>
<td></td>
</tr>
<tr>
<td>CMET 215 Manufacturing Processes</td>
<td>3</td>
</tr>
<tr>
<td>CMET 212 Thermodynamics I</td>
<td>4</td>
</tr>
<tr>
<td>CMET 211 Environmental Quality</td>
<td>4</td>
</tr>
<tr>
<td>CMET 241 Structural Steel Drafting</td>
<td>3</td>
</tr>
<tr>
<td>CMET 254 CMET Seminar</td>
<td>1</td>
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<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>Sixth Term</td>
<td></td>
</tr>
<tr>
<td>CMET 235 Machine Design</td>
<td>3</td>
</tr>
<tr>
<td>CMET 237 MET Applied Computer Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>CMET 222 Thermodynamics II</td>
<td>4</td>
</tr>
<tr>
<td>CMET 223 Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CMET 236 Structural Design</td>
<td>3</td>
</tr>
</tbody>
</table>

* Could be used as General Education

GREEN TECHNOLOGY AND SUSTAINABILITY AAS DEGREE

Minimum 108 credit hours. 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.

MET: Green Technology and Sustainability Degree Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 104 General Chemistry*</td>
<td>5</td>
</tr>
<tr>
<td>CMET 110 Statics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 111 Engineering Technology Orientation</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112 Technical Algebra and Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>CMET 113 Engineering Technology Graphics</td>
<td>3</td>
</tr>
<tr>
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<td>4</td>
</tr>
<tr>
<td>CMET 122 Technical Engineering Physics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123 Technical Algebra with Analytic Geometry</td>
<td>4</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>
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<tbody>
<tr>
<td>CMET 110 Statics</td>
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<tr>
<td>CMET 111 Engineering Technology Orientation</td>
<td>4</td>
</tr>
<tr>
<td>CMET 121 Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122 Technical Engineering Physics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123 Technical Algebra with Analytic Geometry</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education
### MECHANICAL ENGINEERING TECHNOLOGY CERTIFICATE

Minimum 67 credit hours. Students must also meet certificate requirements. The Mechanical Engineering Technology Certificate is a related certificate. All courses within the certificate are in the Mechanical Engineering Technology AAS Degree.

#### Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 50</td>
<td>50</td>
</tr>
<tr>
<td>CH 5</td>
<td></td>
</tr>
<tr>
<td>General Education 4</td>
<td></td>
</tr>
<tr>
<td>SP 4</td>
<td></td>
</tr>
<tr>
<td>WR 4</td>
<td></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>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>4</td>
</tr>
<tr>
<td>CMET 111</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112</td>
<td>4</td>
</tr>
<tr>
<td>CMET 113</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 121</td>
<td>4</td>
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<tr>
<td>CMET 122</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123</td>
<td>4</td>
</tr>
<tr>
<td>CH 104</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 131</td>
<td>8</td>
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<tr>
<td>CMET 227</td>
<td>2</td>
</tr>
<tr>
<td>WR 121</td>
<td>4</td>
</tr>
<tr>
<td>General Education (Social Science) 4</td>
<td></td>
</tr>
</tbody>
</table>

#### Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 226</td>
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</tr>
<tr>
<td>CMET 133</td>
<td>3</td>
</tr>
<tr>
<td>CMET 221</td>
<td>4</td>
</tr>
<tr>
<td>CMET 213</td>
<td>3</td>
</tr>
<tr>
<td>SP 100</td>
<td>4</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>SP 111</td>
<td>4</td>
</tr>
</tbody>
</table>

*Could be used as General Education*

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### MEDICAL ASSISTING

Cascade Campus
Jackson Hall (JH), Room 210A
503-978-5667

www.pcc.edu/programs/medical-asst/

### 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 and treatment; recording vital signs and medical histories; performing certain diagnostic tests; preparing, administering and documenting medications; and 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 (CAAHEP), 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

#### Less than One-Year Certificate

Medical Assisting

### PREREQUISITES AND REQUIREMENTS

1. High school completion or GED.
2. Compass scores to show readiness for WR 121, RD 115 and MTH 60.
3. Students must demonstrate a working knowledge and/or background of basic computer skills including windows, keyboarding, Internet and email. Students not able to demonstrate a working knowledge and/or background will be required to take a course(s) prior to admission.

4. MA 134 requires a keyboarding speed of 35/wpm with no more than three errors.

5. Program advising with a Medical Assisting Program advisor.

6. Students must have transportation to clinical facilities throughout the Portland Metropolitan area and surrounding communities.

7. Two statements of recommendation from a recent employer, instructor or counselor.

8. 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 second 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 CERTIFICATE
Minimum 43 credit hours. Students must meet certificate requirements.

Medical Assisting Certificate Credit Summary
MA 131 Introduction to Medical Science 5
MA 132 Medical Office Assistant Seminar III 1
MA 133 Clinical Directed Practice 2
MA 136 Medications 2
MA 121 Legal & Ethical Aspects of Health Care 2
MA 134 Health Record Transcription Lab 1
MA 147 Specialty Directed Practice 2

MEDICAL IMAGING
Sylvania Campus
Health Technology Building (HT), Room 306
503-977-4227, 503-977-4795
www.pcc.edu/programs/radiography

CAREER AND PROGRAM DESCRIPTION
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 certification examination offered by the American Registry of Radiologic Technologists 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 September with an introductory course in the preceding summer term. 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).

MRI Technologist Training Program:
Special admission required for registration. 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.

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 503-977-4908.

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
Radiography

Less than One-Year Certificate
Magnetic Resonance Imaging

PREREQUISITES AND REQUIREMENTS
All program applicants must have a high school diploma or a GED certificate. In addition, all applicants will be required to have sat-
isfactorily (C grade minimum) completed WR 121, MTH 111B or MTH 111C, 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 early in 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.

College credit courses are available to A.R.R.T. certified technologists for updating and re-entry knowledge and skills. Contact department for specific offerings each term. 503-977-4227.

**RADIOGRAPHY AAS DEGREE**

Minimum 119 credit hours. 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>Radiography Degree Credit Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 102</td>
<td>102</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>HE 110</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credit Total 119</strong></td>
<td></td>
</tr>
</tbody>
</table>

**COURSE OF STUDY**

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

**Summer Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RAD 100 Introduction to Radiology</td>
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</tbody>
</table>

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 101 Radiographic Positioning I</td>
<td>3</td>
</tr>
<tr>
<td>RAD 105 Methods of Patient Care</td>
<td>3</td>
</tr>
<tr>
<td>RAD 106 Radiographic Equipment I</td>
<td>4</td>
</tr>
<tr>
<td>RAD 110 Radiographic Clinic I</td>
<td>4</td>
</tr>
<tr>
<td>HE 110 Cardiopulmonary Resuscitation</td>
<td>1</td>
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</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 102 Radiographic Positioning II</td>
<td>3</td>
</tr>
<tr>
<td>RAD 107 Radiographic Equipment II</td>
<td>4</td>
</tr>
<tr>
<td>RAD 115 Principles of Exposure I</td>
<td>3</td>
</tr>
<tr>
<td>RAD 120 Radiographic Clinic II</td>
<td>4.5</td>
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</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>RAD 103 Radiographic Positioning III</td>
<td>3</td>
</tr>
<tr>
<td>RAD 122 Radiation Protection - Biology</td>
<td>3</td>
</tr>
<tr>
<td>RAD 130 Radiographic Clinic III</td>
<td>4.5</td>
</tr>
<tr>
<td>RAD 132 Radiographic Image Production</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 140 Radiographic Clinic IV</td>
<td>10</td>
</tr>
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<td>General Education</td>
<td>4</td>
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</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 203 Applied Radiography Topics</td>
<td>2</td>
</tr>
<tr>
<td>RAD 209 Advanced Radiographic Procedures</td>
<td>2</td>
</tr>
<tr>
<td>RAD 210 Radiographic Clinic V</td>
<td>6.5</td>
</tr>
<tr>
<td>RAD 215 Principles of Exposure II</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 205 Radiographic Positioning V</td>
<td>3</td>
</tr>
<tr>
<td>RAD 211 Advanced Imaging Modalities</td>
<td>4</td>
</tr>
<tr>
<td>RAD 220 Radiographic Clinic VI</td>
<td>6.5</td>
</tr>
<tr>
<td>General Education</td>
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</table>

**Seventh Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 206 Survey of Medical Imaging Diseases</td>
<td>3</td>
</tr>
<tr>
<td>RAD 230 Radiographic Clinic VII</td>
<td>9</td>
</tr>
</tbody>
</table>

**Eighth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RAD 240 Radiographic Clinic VIII</td>
<td>7</td>
</tr>
<tr>
<td>RAD 216 Radiography Registry Review</td>
<td>2</td>
</tr>
</tbody>
</table>

**MAGNETIC RESONANCE IMAGING CERTIFICATE**

Minimum 32 credit hours. Students must meet certificate requirements.

**Magnetic Resonance Imaging Certificate Credit Summary**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MRI</td>
<td>32</td>
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<td><strong>Credit Total 32</strong></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>
</tr>
</thead>
<tbody>
<tr>
<td>MRI 101 MRI Physics I-Principles, Equipment &amp; Safety</td>
<td>2</td>
</tr>
<tr>
<td>MRI 111 MRI Cross-Sec Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>MRI 121 MRI Clinical Education I</td>
<td>6</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRI 102 MRI Physics II Advanced Principles</td>
<td>2</td>
</tr>
<tr>
<td>MRI 112 MRI Cross-Sec Anatomy II</td>
<td>1</td>
</tr>
<tr>
<td>MRI 122 MRI Clinical Education II</td>
<td>8</td>
</tr>
</tbody>
</table>
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 course 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, Oregon Medical Laboratories, Sisters of Providence Health System, SW Washington Medical Center, Tuality Health Care Hospital and Willamette Falls Hospital and Asante Health System.

Elevated test results, whether due to a patient's medical condition or normal variations, have implications. Students may be required 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 105 credit hours. 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>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>BI</td>
<td>8</td>
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<tr>
<td>WR</td>
<td>4</td>
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<td><strong>Credit Total</strong></td>
<td><strong>105</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>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 104</td>
<td>General Chemistry* </td>
</tr>
<tr>
<td>MLT 111</td>
<td>Medical Technology I</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 121</td>
<td>Introduction to Human Anatomy &amp; Physiology I*</td>
</tr>
<tr>
<td>CH 105</td>
<td>General Chemistry*</td>
</tr>
<tr>
<td>MLT 112</td>
<td>Medical Technology II</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>
Graduates of the Microelectronics Technology Program may also transfer to Oregon Institute of Technology to pursue a bachelor degree in Manufacturing Engineering Technology or Electronic Engineering Technology. Upper division OIT courses are offered at OIT's Metro Campus in Portland. (See notes following the course listing.)

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 Certificate: Career Pathway
- 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 follow a traditional Monday-Wednesday or Tuesday-Thursday schedule.

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.

Full-time day students must begin the program fall or winter term. Part-time students may begin during any term of the academic year.

Students interested in obtaining a Solar Voltaic Manufacturing Technology Career Pathway Certificate must be able to prove their competency in MTH 95 and WR 115.

Note: Students intending to transfer to OIT should:

1. Complete both MTH 243 & 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 102 credit hours. 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>MT 101</td>
<td>43</td>
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<tr>
<td>MTH 102</td>
<td>13</td>
</tr>
<tr>
<td>PHY 103</td>
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<td>CH 101</td>
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<td>SP 102</td>
<td>8</td>
</tr>
<tr>
<td>WR 111</td>
<td>8</td>
</tr>
<tr>
<td>Remaining General Education</td>
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<tr>
<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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>MT 102</td>
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<td>MT 103</td>
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<td>MT 111</td>
<td>4</td>
</tr>
<tr>
<td>MTH 95</td>
<td>4</td>
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<td>WR 121</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 221</td>
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<tr>
<td>MT 112</td>
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</tr>
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<td>MT 121</td>
<td>3</td>
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<tr>
<td>MTH 111C</td>
<td>5</td>
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Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 222</td>
<td>5</td>
</tr>
<tr>
<td>MT 113</td>
<td>4</td>
</tr>
<tr>
<td>MT 122</td>
<td>3</td>
</tr>
<tr>
<td>MTH 243</td>
<td>4</td>
</tr>
<tr>
<td>WR 227</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 223</td>
<td>3</td>
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<tr>
<td>MT 224</td>
<td>3</td>
</tr>
<tr>
<td>PHY 201</td>
<td>4</td>
</tr>
<tr>
<td>SP 130</td>
<td>4</td>
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<tr>
<td><strong>Total</strong></td>
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Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 227</td>
<td>3</td>
</tr>
<tr>
<td>MT 240</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHY 202</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

**General Education:**

SP 215 Small Group Communication* 4

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MT 200</td>
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</tr>
<tr>
<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><strong>Total</strong></td>
<td><strong>13</strong></td>
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**General Education:**

SP 215 Small Group Communication* 4

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 223</td>
<td>3</td>
</tr>
<tr>
<td>MT 224</td>
<td>3</td>
</tr>
<tr>
<td>PHY 201</td>
<td>4</td>
</tr>
<tr>
<td>SP 215</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 240</td>
<td>3</td>
</tr>
<tr>
<td>MT 227</td>
<td>3</td>
</tr>
<tr>
<td>PHY 202</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
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</table>

**General Education:**

SP 215 Small Group Communication* 4

**General Education:**
SOLAR VOLTAIC MANUFACTURING TECHNOLOGY: CAREER PATHWAY CERTIFICATE

Minimum 13 credits. Students must also meet certificate requirements. The Solar Voltaic certificate is a Career Pathway. All courses in the certificate are contained in the Solar Voltaic Technology AAS Degree.

CH 100 Fundamentals for Chemistry 4
MT 90 Basic Electronics 3
MT 101 Introduction to Semiconductor Manufacturing 1
MT 102 Introduction to Semiconductor Devices 1
MT 104 Introduction to Solar Voltaic Processing 1
MT 121 Digital Circuits I 1

MULTIMEDIA

Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 218
503-978-5398 or 503-978-5672

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 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 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. 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 105 credit hours. 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>
<td>49</td>
</tr>
<tr>
<td>ART</td>
<td>16</td>
</tr>
<tr>
<td>BA</td>
<td>8</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>MM Program Electives</td>
<td>8</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>CS</td>
<td>4</td>
</tr>
<tr>
<td>SP</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>105</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**
- MM 110 Introduction to Multimedia 1
- MM 120 Multimedia Design 2
- MM 130 Multi Graphics Video & Audio Production 3
- MM 140 Multimedia Authoring I 3
- CS 160 Exploring Computer Science* 4

**Second Term**
- MM 150 Multimedia Project Review, Testing & Delivery 1
- MM 230 Graphics for Multimedia 4
- MM 231 Vector Graphics & Animations for the WWW 3
- MM 240 Multimedia Authoring II Scripting 4
- MM 235 Digital Video Editing & Production 3

**Third Term**
- MM 241 Multimedia Authoring III-Scripting 4
- MM 220 Multimedia Design II 3
- BA 131 Computers in Business 4
- ART 103 Introduction to Art* 4

**Fourth Term**
- MM 270 Writing for Multimedia 3
- MM 238 Creating Professional DVDs-Video 4
- BA 205 Solving Communication Problems with Technology 4
- SP 130 Business & Professional Speech Communication* 4

**Fifth Term**
- MM 245 Internet Delivery Methods 3
- WR 122 English Composition 4
- 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH</td>
<td>105</td>
</tr>
<tr>
<td>ART</td>
<td>116</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

**Seventh Term**
- MM 250 Advanced Multimedia Project Development I 3
- MM Program Electives 4
- MM Program Electives 4
*Could be used as General Education

**Eighth Term**
- MM 250 Advanced Multimedia Project Development I 3
- MM Program Electives 4
- MM Program Electives 4
- MM Support Electives 9
- **Credit Total** 60

MULTIMEDIA CERTIFICATE
Minimum 60 credit hours. Students must meet comprehensive certificate requirements. The Multimedia Certificate is a related certificate. All courses in the certificate are in the Multimedia AAS Degree.

Multimedia Certificate Credit Summary
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM</td>
<td>33</td>
</tr>
<tr>
<td>MM Program Electives</td>
<td>12</td>
</tr>
<tr>
<td>CAS</td>
<td>6</td>
</tr>
<tr>
<td>MM Support Electives</td>
<td>9</td>
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<tr>
<td><strong>Credit Total</strong></td>
<td><strong>60</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**
- MM 110 Introduction to Multimedia 1
- MM 120 Multimedia Design 2
- MM 130 Multi Graphics Video & Audio Production 3
- MM 140 Multimedia Authoring I 3
- CAS 111D Beginning Web Site Creation/Dreamweaver 3
- CAS 175 Introduction to Flash 3

**Second Term**
- MM 150 Multimedia Project Review, Testing & Delivery 1
- MM 230 Graphics for Multimedia 4
- MM 231 Vector Graphics and Animations for the World Wide Web 3
- MM 240 Multimedia Authoring II - Scripting 4
- MM 235 Digital Video Editing and Production 3

**Third Term**
- MM 241 Multimedia Authoring III - Scripting 4
- MM Support Electives 6
- MM Program Electives 4
- MM Support Electives 3
- MM Support Electives 3
- MM Support Electives 3

**Fourth Term**
- MM 270 Writing for Multimedia 3
- MM 160 Marketing Yourself as a Multimedia Professional 2
- MM Program Electives 4
- MM Support Electives 3

**Fifth Term**
- MM 241 Multimedia Authoring III - Scripting 4
- MM Support Electives 6
- MM Program Electives 8

**Sixth Term**
- ART 115 Basic Design 3
- ART 116 Basic Design 3
- ART 117 Basic Design 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 131</td>
<td>Introduction to Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART 140</td>
<td>Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 293</td>
<td>Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to 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 207</td>
<td>Introduction to E-Commerce</td>
<td>4</td>
</tr>
<tr>
<td>CAS 106</td>
<td>Introduction to X/HTML</td>
<td>1</td>
</tr>
<tr>
<td>CAS 109</td>
<td>Beginning PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics Using Fireworks</td>
<td>1</td>
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<tr>
<td>CAS 111D</td>
<td>Beginning WebSite Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of X/HTML</td>
<td>4</td>
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<tr>
<td>CAS 208</td>
<td>Beginning Photoshop for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 232</td>
<td>Desktop Publishing: InDesign</td>
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</tr>
<tr>
<td>CIS 122</td>
<td>Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133J</td>
<td>Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233J</td>
<td>Java Programming II</td>
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<tr>
<td>CIS 234J</td>
<td>Java Programming III</td>
<td>4</td>
</tr>
<tr>
<td>CIS 178</td>
<td>Applied Internet Concepts</td>
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<tr>
<td>CIS 133B</td>
<td>Intro to Visual Basic.NET Programming</td>
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<tr>
<td>CIS 233B</td>
<td>Intermediate Visual Basic.Net Programming</td>
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<tr>
<td>CIS 234B</td>
<td>Advanced Visual Basic.Net Programming</td>
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<tr>
<td>CS 133G</td>
<td>Introduction to Computer Games</td>
<td>4</td>
</tr>
<tr>
<td>CS 140U</td>
<td>Introduction to UNIX</td>
<td>4</td>
</tr>
<tr>
<td>CS 233G</td>
<td>Game Programming</td>
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<tr>
<td>DRF 126</td>
<td>Introduction to AutoCAD</td>
<td>3</td>
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<tr>
<td>DRF 136</td>
<td>Intermediate AutoCAD</td>
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<tr>
<td>DRF 246</td>
<td>AutoCAD 3-D and Solid Modeling</td>
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<tr>
<td>DRF 256</td>
<td>Advanced AutoCAD</td>
<td>3</td>
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<tr>
<td>ED 103</td>
<td>Desktop Publishing for Educators</td>
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<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>GD 114</td>
<td>Introduction Typography</td>
<td>3</td>
</tr>
<tr>
<td>GD 120</td>
<td>Graphic Design I</td>
<td>3</td>
</tr>
<tr>
<td>GD 122</td>
<td>Graphic Design II</td>
<td>3</td>
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<tr>
<td>GD 124</td>
<td>Graphic Design III</td>
<td>3</td>
</tr>
<tr>
<td>GD 221</td>
<td>Graphic Design IV</td>
<td>3</td>
</tr>
<tr>
<td>GD 222</td>
<td>Graphic Design V</td>
<td>3</td>
</tr>
<tr>
<td>GD 228</td>
<td>Professional Graphic Design Practices</td>
<td>3</td>
</tr>
<tr>
<td>GD 229</td>
<td>Portfolio Preparation</td>
<td>3</td>
</tr>
<tr>
<td>GD 242</td>
<td>Combined Graphic Programs</td>
<td>3</td>
</tr>
<tr>
<td>GD 249</td>
<td>Design Studio</td>
<td>3</td>
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<tr>
<td>MUC 123</td>
<td>Electronic Music 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 222</td>
<td>Introduction to Recording Technologies</td>
<td>2</td>
</tr>
<tr>
<td>MUC 223</td>
<td>Studio Recording Technology I</td>
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</tr>
<tr>
<td>MUC 224</td>
<td>Studio Recording Technology II</td>
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<tr>
<td>MUC 225</td>
<td>Studio Recording Technology III</td>
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</tr>
<tr>
<td>MUC 226</td>
<td>Digital Recording I</td>
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<tr>
<td>MUC 227</td>
<td>Digital Recording II</td>
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<tr>
<td>MUC 228</td>
<td>Digital Recording III</td>
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<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I</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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<tr>
<td>WR 9601</td>
<td>Graphics for Technical and Professional Writing II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Multimedia Program Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 141</td>
<td>Incorporating Multimedia Elements in Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>MM 233</td>
<td>3D Character Modeling and Animation</td>
<td>3</td>
</tr>
<tr>
<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>
<td>3</td>
</tr>
<tr>
<td>MM 244</td>
<td>Creating Interactive Web Pages</td>
<td>3</td>
</tr>
<tr>
<td>MM 251</td>
<td>Advanced Multimedia Project Development I</td>
<td>3</td>
</tr>
<tr>
<td>MM 252</td>
<td>Advanced Multimedia Project Development III</td>
<td>3</td>
</tr>
</tbody>
</table>

**VIDEO PRODUCTION CERTIFICATE**

Minimum 44 credit hours. Students must meet comprehensive certificate requirements.

**Video Production Certificate Credit Summary**

**Video Production Core Courses** 35

**Video Production Cert Electives** 9

**Credit Total 44**

**Electives**

**Video Production Certificate Electives** 9

**Video Production Certificate Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>MM 141</td>
<td>Incorporating Multimedia Elements in Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>MM 231</td>
<td>Vector Graphics &amp; Animation</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>
<td>3</td>
</tr>
<tr>
<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>
<td>3</td>
</tr>
<tr>
<td>MM 240</td>
<td>Multimedia Authoring II-Scripting</td>
<td>4</td>
</tr>
<tr>
<td>MM 241</td>
<td>Multimedia Authoring III-Scripting</td>
<td>4</td>
</tr>
<tr>
<td>MM 244</td>
<td>Creative 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 250</td>
<td>Advanced Multimedia Project Development I</td>
<td>3</td>
</tr>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
<td>3</td>
</tr>
</tbody>
</table>
MUSIC

Rock Creek
Building 3, Room 201
503-614-7235

Sylvania Campus
Communications Technology Building, (CT) Room 216
503-977-4264 or 503-977-4759

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
503-977-4466

Health Admissions
Health Technology Building (HT), Room 205
503-977-4795

www.pcc.edu/programs/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 critical 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 co-admission to Portland Community College and 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 program. Students may also elect to forgo licensure continuing their fourth year of study in OHSU's School of Nursing, leading to a Bachelors of Science degree (BSN) from OHSU, and at that point be eligible to take the NCLEX-RN licensing exam.

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
503-731-4745

National League for Nursing Accrediting Commission (NLNAC)
3343 Peachtree Rd Suite 500
Atlanta, Georgia 30326
Phone (404) 975-5000

DEGREES AND CERTIFICATES OFFERED
Associate of Applied Science Degree
    Nursing

PREREQUISITES AND REQUIREMENTS
All prerequisite courses must be taken for a grade C or higher. Pass/No Pass courses are not accepted.

Prerequisites/Preparatory courses:

<table>
<thead>
<tr>
<th></th>
<th>Course No.</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL</td>
<td>231</td>
<td>Human Anatomy &amp; Physiology I*</td>
<td>4</td>
</tr>
<tr>
<td>BL</td>
<td>232</td>
<td>Human Anatomy &amp; Physiology II*</td>
<td>4</td>
</tr>
<tr>
<td>BL</td>
<td>233</td>
<td>Human Anatomy &amp; Physiology III*</td>
<td>4</td>
</tr>
<tr>
<td>FN</td>
<td>225</td>
<td>Nutrition*</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>95</td>
<td>Intermediate Algebra or higher*</td>
<td>4</td>
</tr>
<tr>
<td>PSY</td>
<td>215</td>
<td>Human Development*</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>122</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>
General Education Minimum 13
*These courses must be completed within seven years prior to application.

STUDENT DISABILITY INFORMATION
Nursing is a physically and mentally challenging occupation. Education related to this field is designed to prepare nurses for these challenges. Nursing students must be able to meet all established essential 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 503-977-4341. 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 identified and ensuring that accommodations are provided for PCC students. 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 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 credit hours. 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 17
Remaining General Education 8
BI 5
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
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 Pharmacology 3
NRS 232 Pathophysiological Process I 3
General Education 4

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 1 5

Fourth Term
NRS 221 Nursing in Chronic Illness II

Fifth Term
NRS 222 Nursing in Acute Care II & End of Life 9
Nursing Program Electives 6

Sixth Term
NRS 224 Integrative Practicum I 9
Nursing Program Electives 6

*Could be used as General Education and must be completed by the end of the first term of the nursing program and cannot be older than seven years from the time of admission.

Note: Students who plan to continue through to OHSU must be aware that to earn the bachelor’s degree they must have two years of the same high school-level language, or two terms of college-level language or pass a language proficiency examination. College-level foreign language (including American Sign Language) credits count toward degree requirements. A minimum of 9 credits of humanities is required for the OHSU degree. Students planning to earn a bachelor’s degree are encouraged to complete MTH 243 Probability and Statistics soon after the prerequisite math course.

OCCUPATIONAL SKILLS TRAINING
Southeast Center
Mt Tabor Hall (MTH), Room 106
503-788-6127
www.pcc.edu/programs/occupational-skills/

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. Individualized 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

PREQUISITES 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 CERTIFICATE**
Minimum 64 credit hours are required for a Certificate of Completion. A maximum of 24 credit hours of Occupational Skills credit may be applied to an Associate of General Studies Degree.

**OPHTHALMIC MEDICAL TECHNOLOGY**
Cascade Campus
Jackson Hall (JH), Room 210A
503-978-5667
www.pcc.edu/programs/ophthalmic/

**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 six 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. Compass scores to show readiness for WR 121, RD 115 and MTH 60.
3. Two statements of recommendation from a recent employer, instructor or counselor.
4. Students must have working knowledge or background of basic computer skills including Windows, Internet and email.
5. Program advising session with an Ophthalmic Medical Technology Program faculty 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>
</tr>
</thead>
<tbody>
<tr>
<td>OMT 65</td>
<td>65</td>
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<tr>
<td>Remaining General Education</td>
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<tr>
<td>BI</td>
<td>8</td>
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<tr>
<td>MA</td>
<td>5</td>
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<td>PSY</td>
<td>4</td>
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<td>HE</td>
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</tr>
<tr>
<td><strong>Credit Total</strong></td>
<td><strong>91</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>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 121 Intro to Human Anatomy &amp; Physiology I*</td>
<td>4</td>
</tr>
<tr>
<td>OMT 111 Medical Terminology</td>
<td>4</td>
</tr>
<tr>
<td>OMT 145 Clinical Optics I</td>
<td>2</td>
</tr>
<tr>
<td>OMT 163 Ocular Anatomy and Physiology</td>
<td>2</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMT 102 Pharmacology/Eye Disease I</td>
<td>2</td>
</tr>
<tr>
<td>PSY 101 Psychology and Human Relations*</td>
<td>4</td>
</tr>
<tr>
<td>OMT 104 Ophthalmic Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OMT 146 Clinical Optics II</td>
<td>2</td>
</tr>
<tr>
<td>BI 122 Intro to Human Anatomy &amp; Physiology II*</td>
<td>4</td>
</tr>
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</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>OMT 106 Introduction to Clinical Skills</td>
<td>3</td>
</tr>
<tr>
<td>MA 131 Introduction to Medical Science</td>
<td>5</td>
</tr>
<tr>
<td>OMT 103 Pharmacology/Eye Disease II</td>
<td>2</td>
</tr>
<tr>
<td>OMT 283 Perception/Low Vision</td>
<td>2</td>
</tr>
<tr>
<td>OMT 231 Seminar I</td>
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<tr>
<td>OMT 121 Practicum I</td>
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</tbody>
</table>

Only those students who have completed the first year requirements and have been officially accepted into the second year of the Ophthalmic Technology Program may enroll in the courses listed below.

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>OMT 206 Diagnostic Procedures I</td>
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<tr>
<td>OMT 209 Surgical Assisting Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OMT 232 Seminar II</td>
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</tr>
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PARALEGAL

Cascade Campus
Terrell Hall (TH), Room 109
503-978-5212 or 503-978-5258
www.pcc.edu/programs/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 a lawyer 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. Paralegal training may also provide students with employment opportunities in related fields. Legal research classes are taught in the program’s law library located at the Cascade Campus.

The Paralegal Department recently received formal approval of its program from the American Bar Association. This approval from the ABA, along with Portland Community College's accreditation from the Northwest Commission on Colleges and Universities (NWCCU), provides students with assurance that the paralegal department is providing high quality training and education to its students.

Program advising is required. Students planning to enroll in the program should contact the department for specific eligibility requirements and advising. Students who meet prerequisites with classes from another institution, including prior degrees, should contact the department for approval to register.

Classes meet primarily on weekday evenings from 6:30 pm to 9:20 pm, but some daytime and Saturday classes are scheduled as well. Most classes are located at the Cascade Campus or PCC Central location on Water Avenue, but classes are also offered periodically at the Rock Creek or Sylvania campuses.

The Paralegal Certificate is a limited entry certificate with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission. Personal consultation with and prior approval by the department chair for students seeking a Paralegal Certificate is required. Refer to the PCC Paralegal Department website for other requirements www.pcc.edu/programs/paralegal/.

Paralegal courses may transfer to Portland State University toward a general studies degree. PCC students interested in transferring to any four-year university should check with that institution for information about specific paralegal courses.

DEGREES AND CERTIFICATES OFFERED

Associate of Applied Science Degree
Paralegal

One-Year Certificate
Paralegal

PREREQUISITES AND REQUIREMENTS

The Paralegal Degree requirements include:
1. Completion of WR 121 with a C or better
2. Completion of WR 122 with a C or better or equivalent, unless waived by the department
3. Completion of CAS 133 or equivalent with a C or better, unless waived by the department
4. Completion of MTH 65 or MTH 63 a C or better or passing the PCC competency exam for MTH 65.

The Paralegal Certificate requirements include:
1. Completion of WR 121 with a C or better
2. Completion of WR 122 with a C or better unless waived by the department
3. Completion of CAS 133 with a C or better unless waived by the department
4. Department chair approval is required. See guidelines on department web page www.pcc.edu/programs/paralegal/

Placements tests for math and writing classes may be required unless waived due to equivalency or prior degree. Students with prior degrees and prior learning from recognized, accredited colleges may have some requirements substituted. Such students will normally be permitted to transfer prior degree credits to PCC.
Programs and Disciplines

often satisfying all of the General Education and elective requirements. Students should consult with the department chair or advisor for approval. See also the department web page link above.

PARALEGAL AAS DEGREE

Minimum 90 credit hours. 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

Paralegal Core Courses 21
Paralegal Program Electives 24
Paralegal Support Electives 18
Restricted General Education 27
Credit Total 90

Paralegal Core Courses
PL 101 Introduction to Law-Fundamentals 3
PL 102 Introduction to Law-Substantive Areas 3
PL 103 Introduction to Law-Ethics 3
PL 106 Computer Research in Law 3
PL 107 Techniques of Interview 3
PL 203 Legal Research and Library Use 3
PL 204 Applied Legal Research and Drafting 3

Electives and Remaining General Education
Paralegal Program Electives1 24
Paralegal Support Electives2 18
Restricted General Education3 27

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.

Paralegal Support Electives
Students should consult Department Chair for a list of approved Support Electives.

PARALEGAL CERTIFICATE

Minimum 45 credit hours. Students must also meet certificate requirements. The Paralegal Certificate is a related certificate. All courses within the certificate are contained in the Paralegal AAS Degree.

Paralegal Certificate Credit Summary
Paralegal Core Courses 21
Paralegal Program Electives 24
Credit Total 45

Paralegal Core Courses
PL 101 Introduction to Law-Fundamentals 3
PL 102 Introduction to Law-Substantive Areas 3
PL 103 Introduction to Law-Ethics 3
PL 106 Computer Research in Law 3
PL 107 Techniques of Interview 3
PL 203 Legal Research and Library Use 3
PL 204 Applied Legal Research and Drafting 3

Paralegal Program Electives
PL 104 Investigation Techniques for Paralegals 3
PL 105 Litigation 3

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
503-977-4217 or 503-977-4218
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 & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251
Rock Creek Campus
Building 3, Room 201
503-614-7235
Sylvania Campus
Social Science Building (SS), Room 215
503-977-4324

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
Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251
Rock Creek Campus
Building 7, Room 202
503-614-7257
Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6147
Sylvania Campus
Health Technology Building (HT), Room 215
503-977-4210

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 such as group and individual fitness, spinning, weight training, team sports, aquatics, martial arts and mind-body disciplines, such as Yoga, Pilates and Tai Chi. 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.

Although a physical exam is not required for physical education 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 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) section of this catalog for individual Physical Education courses and course prerequisites.

PHYSICS
Cascade Campus
Jackson Hall (JH), Room 210
503-978-5209
Rock Creek Campus
Building 7, Room 202
503-614-7500
Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6147
Sylvania Campus
Science Technology Building (ST), Room 312
503-977-4174

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 & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251
Rock Creek Campus
Building 3, Room 201
503-614-7327
Sylvania Campus
SS 215
503-977-4289

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
503-978-5226 or 503-978-5430 or 503-978-5430
www.pcc.edu/programs/music-pro/

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 promoter/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 the certificate by completing a minimum of 43 credit hours, 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 CERTIFICATE

Minimum 43 credit hours. Students must meet certificate requirements.

Professional Music Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUC</td>
<td>28</td>
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<tr>
<td>MUS</td>
<td>9</td>
</tr>
<tr>
<td>MUC/MUS Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
</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.

Summer Term
Professional Music Certificate Electives 6

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MUC 101</td>
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<tr>
<td>MUC 120A</td>
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</tr>
<tr>
<td>MUC 130A</td>
<td>1</td>
</tr>
<tr>
<td>MUC 140A</td>
<td>2</td>
</tr>
<tr>
<td>MUC 145A</td>
<td>2</td>
</tr>
<tr>
<td>MUC 150A</td>
<td>1</td>
</tr>
<tr>
<td>MUS 205</td>
<td>1</td>
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<tr>
<td>MUS 206</td>
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Second Term

<table>
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<th>Course</th>
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<tr>
<td>MUC 130B</td>
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<tr>
<td>MUC 150B</td>
<td>1</td>
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<td>MUC 234</td>
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<tr>
<td>MUC 280A</td>
<td>1</td>
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<tr>
<td>MUS 206</td>
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</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
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<td>MUC 130C</td>
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<td>MUC 143</td>
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<td>MUC 150C</td>
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<td>MUC 164</td>
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<tr>
<td>MUS 207</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 credit hours required for the certificate. It is possible to concentrate on music writing or performance.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUC 123</td>
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</tr>
<tr>
<td>MUC 124</td>
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<tr>
<td>MUC 125</td>
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<tr>
<td>MUC 140B</td>
<td>2</td>
</tr>
<tr>
<td>MUC 144</td>
<td>2</td>
</tr>
<tr>
<td>MUC 145B</td>
<td>2</td>
</tr>
<tr>
<td>MUC 145C</td>
<td>2</td>
</tr>
<tr>
<td>MUC 154A</td>
<td>2</td>
</tr>
<tr>
<td>MUC 154B</td>
<td>2</td>
</tr>
<tr>
<td>MUC 154C</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155A</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155B</td>
<td>2</td>
</tr>
<tr>
<td>MUC 155C</td>
<td>2</td>
</tr>
<tr>
<td>MUC 167</td>
<td>2</td>
</tr>
<tr>
<td>MUC 222</td>
<td>2</td>
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<tr>
<td>MUC 223</td>
<td>3</td>
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<tr>
<td>MUC 224</td>
<td>3</td>
</tr>
<tr>
<td>MUC 225</td>
<td>3</td>
</tr>
<tr>
<td>MUC 226</td>
<td>3</td>
</tr>
<tr>
<td>MUC 227</td>
<td>3</td>
</tr>
</tbody>
</table>
MUC 228 Digital Recording III 3
MUS 108 Music Cultures of the World 3
MUS 110 Fundamentals of Music 3

PSYCHOLOGY

Cascade Campus
Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7327

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Sylvania Campus
Social Science Building (SS), Room 215
503-977-4289

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
503-977-4393 or 503-977-4289
www.pcc.edu/re

CAREER AND PROGRAM DESCRIPTION
PCC’s Real Estate Program offers classes to prepare brokers, appraisers 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. PCC also offers the Real Estate Advanced Practices post-license course which is required of all real estate brokers prior to their first license renewal.

Real estate appraisers, depending upon which license or certifi-
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 diversity requirements. 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
503-977-4841
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
503-977-4672 (V); 1-866-970-7933 (VP)
www.pcc.edu/programs/sign-language/

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.

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 130 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 April 1. 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 130 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 professional in an agency that serves Deaf people. Deaf Studies is a one-year certificate 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 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 district 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 credit hours. 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
ITP 85
Remaining General Education 12
HEC or PSY 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
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 271 Interpreting Process II 4
ITP 180 Field Experience 1
General Education 4

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 III 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
General Education 4

*Could be used as General Education
** Only one internship is required.

SIGN LANGUAGE INTERPRETATION CERTIFICATE
Minimum 89 credit hours. Students must meet certificate requirements. The Sign Language Interpretation Certificate is a related certificate. All courses within the certificate are 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Notes</th>
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</thead>
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<td>American Sign Language II</td>
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<td>ASL Linguistics I</td>
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<td>ITP 260</td>
<td>ITP 271</td>
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<td>Field Experience</td>
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### Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Notes</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ITP 113</td>
<td>ASL III</td>
<td>American Sign Language III</td>
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<tr>
<td>ITP 121</td>
<td>Fingerspelling II</td>
<td>Fingerspelling II</td>
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<tr>
<td>ITP 276</td>
<td>Specialized Discourse I</td>
<td>Specialized Discourse I</td>
<td>3</td>
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<tr>
<td>ITP 231</td>
<td>ASL Linguistics II</td>
<td>American Sign Language Linguistics II</td>
<td>2</td>
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<tr>
<td>ITP 272</td>
<td>Process III</td>
<td>Interpreting Process III</td>
<td>4</td>
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<tr>
<td>ITP 279</td>
<td>Mock Interpreting I</td>
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### Fourth Term

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<td>American Sign Language IV</td>
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<tr>
<td>ITP 277</td>
<td>Specialized Discourse II</td>
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<td>ITP 273</td>
<td>Interpreting Process IV</td>
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<tr>
<td>ITP 281</td>
<td>Mock Interpreting II</td>
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<tr>
<td>ITP 262</td>
<td>Interpreting Theory III</td>
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### Fifth Term

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<tbody>
<tr>
<td>ITP 212</td>
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<td>American Sign Language V</td>
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<td>ITP 261</td>
<td>Interpreting Theory II</td>
<td>Interpreting Theory II</td>
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<tr>
<td>ITP 285</td>
<td>Deaf Studies Internship</td>
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### Sixth Term

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<tr>
<td>ITP 275</td>
<td>Interpreting Process VI</td>
<td>Interpreting Process VI</td>
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<tr>
<td>ITP 284</td>
<td>Interpreting Internship II</td>
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</tr>
</tbody>
</table>

**Note:** HEC 226 or PSY 215 can be taken during any term.

### DEAF STUDIES CERTIFICATE

Minimum 52 credit hours. Students must meet certificate requirements.

#### Deaf Studies Certificate Credit Summary

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Notes</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ITP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HEC or PSY</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>Notes</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ITP 111</td>
<td>ASL</td>
<td>ASL I</td>
<td>5</td>
</tr>
<tr>
<td>ITP 120</td>
<td>Fingerspelling I</td>
<td>Fingerspelling I</td>
<td>2</td>
</tr>
<tr>
<td>ITP 131</td>
<td>Deaf Culture</td>
<td>Deaf Culture</td>
<td>4</td>
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</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Notes</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ASL II</td>
<td>ASL II</td>
<td>5</td>
</tr>
<tr>
<td>ITP 230</td>
<td>ASL Linguistics I</td>
<td>ASL Linguistics I</td>
<td>3</td>
</tr>
<tr>
<td>ITP 260</td>
<td>Interpreting Theory I</td>
<td>Interpreting Theory I</td>
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</tr>
<tr>
<td>ITP 180</td>
<td>Field Experience</td>
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#### Third Term

<table>
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<tr>
<th>Course</th>
<th>Code</th>
<th>Notes</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 113</td>
<td>ASL II</td>
<td>ASL II</td>
<td>5</td>
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<tr>
<td>ITP 121</td>
<td>Fingerspelling II</td>
<td>Fingerspelling II</td>
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</tr>
<tr>
<td>ITP 231</td>
<td>ASL Linguistics II</td>
<td>ASL Linguistics II</td>
<td>2</td>
</tr>
</tbody>
</table>

### SIGN LANGUAGE STUDIES (SLS)

#### Sylvania Campus

Communications Technology Building (CT), Room 219
503-977-4672 (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 Education credits as a modern language for students earning an associate degree from PCC and second year courses satisfy the language requirement for the associate of arts Oregon transfer. With the exception of ASL 130 Deaf Studies, American Sign Language will be used in classes; no spoken English will be used. This method involves the student in conversation using ASL and prepares them to function comfortably in a variety of situations in the Deaf community. Completion of ASL courses does not qualify a student to perform interpreting services. Interpreting requires formal training. Students who are interested in interpreting as a career, please see the catalog description under Sign Language Interpretation (SLIP.)

The following general remarks apply to all sign language studies courses:

All students who enroll in sign language studies 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. Students who have studied sign language elsewhere and wish to continue at PCC must take a Sign Language Proficiency Interview through the department. Call Sign Language Studies Department, 503-977-4672 voice or 1-866-970-7933 (VP) at least three weeks prior to the end of the term before the term you plan to take ASL to schedule 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.

### SOCIOLOGY

#### Cascade Campus

Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251
DESCRIPTION

Sociology is the study of human social behavior. It is the scientific study of human interaction with a focus on human group life. The general sociology sequence, SOC 204 and SOC 205, introduces the student to basic knowledge, concepts, theory and research in sociology. It is recommended, but not required, that the courses be taken in sequence. The sequence is a prerequisite for upper division sociology courses at most four-year institutions.

See the Course Description (SOC prefix) section of this catalog for individual sociology courses and course prerequisites.

SPANISH

Cascade Campus
Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7235

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-244-3585

Sylvania Campus
Communications Technology Building (CT), Room 219
503-977-8023

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. See the Course Description (SPA prefix) section of this catalog for individual Spanish language courses and their prerequisites.

SPEECH COMMUNICATION

Cascade Campus
Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7235

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Sylvania Campus
Communications Technology Building (CT), Room 216
503-977-4264

DESCRIPTION

Speech Communication 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. Speech Communication 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 speech communication 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.

THEATRE ARTS

Cascade Campus
Moriarty Arts and Humanities Building
503-978-5264

Rock Creek Campus
Building 3, Room 201
503-614-7235

Sylvania Campus
Performing Arts Center
503-977-4323
Box Office 503-977-4949
www.pcc.edu/programs/theatre/

DESCRIPTION

In a state-of-the-art proscenium theater in the Sylvania campus’ Performing Arts Center, the program mounts three fully staged productions each academic year, ranging across a wide swath of compelling and entertaining genres. The PCC Theatre Arts courses prepare community college students in the arts of acting, directing, design, and stagecraft. Our students often find professional employment as technicians or actors, or excel when transferring to four-year academic programs. The program has competed in the Kennedy Center/American College Theater Festival where our students have brought home numerous awards.
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 and acting and produce three mainstage shows each year. In addition, the annual Student One-Act Play Festival showcases new plays written, directed, acted, and designed by our students. Students may select courses to complete requirements for the Associate of Arts Oregon Transfer (AAOT) degree.

VETERINARY TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
503-614-7461

www.pcc.edu/programs/vet-tech/

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 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 Biology, 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 credit hours. 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
VT 72
Cooperative Education 12
Prerequisites 9
Remaining General Education 7
WR 4

Credit Total 104

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

Prerequisites
BI 112 Cell Biology for Health Occupations 5
CH 100 Fundamentals for Chemistry 4

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

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 3

Fourth Term
DEGREE AND CERTIFICATES OFFERED:

Associate of Applied Science Degree
Welding Technology

Two-Year Certificate
Welding Technology

Less than One-Year Certificate
Welding Technology

PREREQUISITES AND REQUIREMENTS

Contact department for program advising.

WELDING TECHNOLOGY AAS DEGREE
Minimum 97 credit hours. 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 Summary
Welding Degree Core Courses 69
Welding Program Electives 12
General Education 16
Credit Total 97

Welding Degree Core 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

Electives and Remaining General Education
Welding Program Electives 12
General Education 16

WELDING TECHNOLOGY TWO-YEAR CERTIFICATE
Minimum 93 credit hours. Students must meet all certificate requirements. The Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.
### Welding Technology Two-Year Certificate Summary

<table>
<thead>
<tr>
<th>Welding Two Year Core Courses</th>
<th>81</th>
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<tbody>
<tr>
<td>Welding Program Electives</td>
<td>12</td>
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#### Welding Two Year Certificate Core Courses

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<td>Explorations in Mathematics</td>
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<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
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</tr>
<tr>
<td>SP 100</td>
<td>Introduction to Speech and Communications</td>
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<td>WLD 101</td>
<td>Welding Processes and Applications</td>
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</tr>
<tr>
<td>WLD 102</td>
<td>Blue Print Reading</td>
<td>4</td>
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<tr>
<td>WLD 111</td>
<td>Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting</td>
<td>4</td>
</tr>
<tr>
<td>WLD 112</td>
<td>Shielded Metal Arc Welding: Mild Steel I (E7018)</td>
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<td>Shielded Metal Arc Welding: Mild Steel II (E7018)</td>
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<td>Shielded Metal Arc Welding: Mild Steel III (E6011)</td>
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<td>WLD 131</td>
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<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
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<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
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<td>Flux-Cored Arc Welding II (Self Shielding)</td>
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<td>WLD 151</td>
<td>SMAW Certification Practice: Unlimited Thickness Mild Steel</td>
<td>3</td>
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<td>WLD 152</td>
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<td>WLD 203</td>
<td>Structural Steel Welding Codes and Standards</td>
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<td>WLD 221</td>
<td>Gas Tungsten Arc Welding: Mild Steel</td>
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<td>Gas Tungsten Arc Welding: Aluminum</td>
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<tr>
<td>WLD 223</td>
<td>Gas Tungsten Arc Welding: Stainless Steel</td>
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<td>WLD 261</td>
<td>Basic Fabrication I</td>
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<td>WLD 263</td>
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#### Welding Program Electives

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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WLD 115</td>
<td>Shielded Metal Arc Welding: Mild Steel IV (E6011)</td>
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<tr>
<td>WLD 136A</td>
<td>Beginning Wire Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 136B</td>
<td>Wire Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 146A</td>
<td>Basic Pipe Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 146B</td>
<td>Beginning Pipe Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 156A</td>
<td>Beginning Oxy-Acetylene Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 156B</td>
<td>Basic Oxy-Acetylene Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 166A</td>
<td>Beginning Weld Practice Metal Sculpting</td>
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</tr>
<tr>
<td>WLD 166B</td>
<td>Basic Weld Practice Metal Sculpting</td>
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<tr>
<td>WLD 176A</td>
<td>Beginning Fabrication Welding Practice</td>
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</tr>
<tr>
<td>WLD 176B</td>
<td>Basic Fabrication Welding Practice</td>
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</tr>
<tr>
<td>WLD 186A</td>
<td>Certificates Welding Practice</td>
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<td>WLD 186B</td>
<td>Wire Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 190A</td>
<td>Beginning Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 190B</td>
<td>Basic Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 190C</td>
<td>Intermediate Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 216</td>
<td>Miscellaneous Electrodes &amp; Advanced Positions</td>
<td>3</td>
</tr>
<tr>
<td>WLD 224</td>
<td>Gas Tungsten Arc Welding: Mild Steel Pipe I</td>
<td>3</td>
</tr>
<tr>
<td>WLD 225</td>
<td>Gas Tungsten Arc Welding: Mild Steel Pipe II</td>
<td>3</td>
</tr>
<tr>
<td>WLD 236A</td>
<td>Wire Welding</td>
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<td>WLD 236B</td>
<td>Wire Welding</td>
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<td>WLD 246A</td>
<td>Intermediate Pipe Welding Practice</td>
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<td>WLD 246B</td>
<td>Advanced Pipe Welding Practice</td>
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<tr>
<td>WLD 253</td>
<td>SMAW Certificate Practice 3/8” Mild Steel (E6011)</td>
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<td>SMAW Certificate Practice 3/8” Mild Steel (E7018)</td>
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<tr>
<td>WLD 256</td>
<td>Preparation for Pipe Certification I</td>
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<td>WLD 256A</td>
<td>Intermediate Oxy-Acetylene Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 256B</td>
<td>Advanced Oxy-Acetylene Welding Practice</td>
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</tr>
<tr>
<td>WLD 257</td>
<td>Preparation for Pipe Certification II</td>
<td>3</td>
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<tr>
<td>WLD 262</td>
<td>Basic Fabrication II</td>
<td>6</td>
</tr>
<tr>
<td>WLD 266A</td>
<td>Intermediate Weld Practice Metal Sculpting</td>
<td>3</td>
</tr>
<tr>
<td>WLD 271</td>
<td>Oxy-acetylene Welding Projects</td>
<td>3</td>
</tr>
<tr>
<td>WLD 276A</td>
<td>Intermediate Fabrication Welding Practice</td>
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</tr>
<tr>
<td>WLD 276B</td>
<td>Advanced Fabrication Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 280A</td>
<td>CE: Welding</td>
<td>varied</td>
</tr>
<tr>
<td>WLD 280B</td>
<td>CE: Welding-Seminar</td>
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</tr>
<tr>
<td>WLD 286A</td>
<td>Certification Welding Practice</td>
<td>3</td>
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<tr>
<td>WLD 286B</td>
<td>Certification Welding Practice</td>
<td>3</td>
</tr>
<tr>
<td>WLD 290</td>
<td>Submerged Arc Welding</td>
<td>2</td>
</tr>
<tr>
<td>WLD 295</td>
<td>Sculpture Welding I</td>
<td>4</td>
</tr>
<tr>
<td>WLD 9910</td>
<td>Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 9911</td>
<td>Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 9912</td>
<td>Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 9913</td>
<td>Shielded Metal Arc Welding</td>
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</tr>
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<td>WLD 9920</td>
<td>Gas Tung Arc Welding</td>
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</tr>
<tr>
<td>WLD 9921</td>
<td>Gas Tung Arc Welding</td>
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<td>WLD 9922</td>
<td>Gas Tung Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 9923</td>
<td>Gas Tung Arc Welding</td>
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</tr>
<tr>
<td>WLD 9963</td>
<td>Welding Practice Sculpting Practice</td>
<td>3</td>
</tr>
</tbody>
</table>
WOMEN’S STUDIES
Cascade Campus
Terrell Hall (TH), Room 220
503-978-5251
Rock Creek Campus
Building 3, Room 201
503-614-7248
Sylvania Campus
Social Science Building (SS), Room 215
503-977-4289
www.pcc.edu/pcc/pro/progs/ws/

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. Introduction to 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 & 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.

www.pcc.edu/programs/writing/

DESCRIPTION
Writing is fundamental in learning to think and express one's thoughts in ways that reach others. The ability to use language coherently and powerfully and to write in ways that connect with others across cultural boundaries and within communities is essential to active citizenship and to success in almost any profession. The writing courses at PCC enable students to inquire, to discover, to inform, to persuade, and to think creatively, preparing them to transfer to universities and evolve vocationally.

PCC's English Composition Program courses prepare students for the written work of upper division courses and graduate education; also, writing courses meet the requirements for several associate degree and certificate programs at PCC. For students who wish to transfer to a four-year Oregon college or university, WR 121, 122 and/or WR 227 satisfy the writing course requirements. Writing transfer courses are offered under the subject headings of English Composition, Business and Technical Writing, and Creative Writing. Students majoring in technical areas or business are encouraged to take WR 227.

In addition, PCC offers students one of the largest selections of creative writing courses in Oregon. Information on the focus award in creative writing may be found in the Focus Award section. Placement into WR121 is a prerequisite for creative writing classes; completion of WR121 is recommended.

Conferences are an integral part of the instructional process in all writing courses, and students should expect at least two per term. Students are required to take the writing placement examination to determine appropriate placement in a writing course. Testing centers are available at Cascade, Rock Creek, Southeast Center or Sylvania. Once students receive placement scores, they should check with an advisor before enrolling in a writing course. See the Course Description (WR prefix) section of this catalog for individual Writing 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.

www.pcc.edu/programs/asian-studies/

ASIAN STUDIES FOCUS AWARD
PCC's Asian studies foster a richer understanding and apprecia-
tion 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 must 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 Eastern Civilizations: India and the Subcontinent 4
- HST 106 History of Eastern Civilizations: East Asia 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

**Speech**
- 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](http://www.eastwestcenter.org).

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**CREATIVE WRITING FOCUS AWARD**

[www.pcc.edu/programs/writing/creative/](http://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 & 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

- WR 246 For a second time

**4 credits of diversity literature classes:**

- ENG 207, 208, or 209 World Lit—Asian
- ENG 211 Contemporary African Lit
- ENG 213 Latin American Lit
- ENG 222 Images of Women in Lit
- ENG 240 Native American Lit
An introductory body of knowledge in Health Studies to prepare 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>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 250</td>
<td>Personal Health</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>HPE 295</td>
<td>Health and Fitness for Life3</td>
</tr>
<tr>
<td>HE 251</td>
<td>Community and Public Health Issues4</td>
</tr>
</tbody>
</table>

**Elective Health Courses (one required, additional may be selected)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 212</td>
<td>Women's Health</td>
</tr>
<tr>
<td>HE 213</td>
<td>Men's Health</td>
</tr>
<tr>
<td>HE 242</td>
<td>Stress and Human Health*</td>
</tr>
<tr>
<td>HE 255</td>
<td>Film and Public Health*</td>
</tr>
<tr>
<td>HE 264</td>
<td>Health, Food, and the Environment</td>
</tr>
</tbody>
</table>

**Approved Related Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 241</td>
<td>Prevention, Theory, and Practice</td>
</tr>
<tr>
<td>ESR 171</td>
<td>Environmental Studies</td>
</tr>
<tr>
<td>FN 225</td>
<td>Nutrition</td>
</tr>
<tr>
<td>PSY 215</td>
<td>Human Development</td>
</tr>
<tr>
<td>PSY 231</td>
<td>Human Sexuality</td>
</tr>
<tr>
<td>SOC 231</td>
<td>Sociology of Health and Aging</td>
</tr>
</tbody>
</table>

*Lower division courses that will be accepted as equivalent to PSU's upper division courses. Transfer students will still need to complete upper division credit requirements for the university and/or college.

**PEACE AND CONFLICT FOCUS AWARD**

Students who are applying for the Communication Studies Focus Award should call 503-614-7091

**PACS I Focus Award Requirements**

1. A minimum of 18 credit hours, 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 credit hours; 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.
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
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 General Sociology: Sociology in Everyday Life 4
SOC 205 General Sociology: Social Change & Social Institutions 4
SOC 206 General Sociology: 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 206 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

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: Alternative Idea Systems 4

Category V: Communication: Peace and Conflict
ENG 197 Contemporary Themes & Genres 4
MUS 207 Introduction to the History of Folk Music 4
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 503-977-4854.

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 on 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:
Focus Awards

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 or
- 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

One course from the following:
- TA 112 Introduction to Set Design 4
- TA 113 Introduction to Stage Lighting 4
- TA 116 Stagecraft 3
- TA 190C Projects in Theatre 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 101 Music Appreciation 3
- 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 4
- 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 & Theory 4
- SP 215 Small Group Communication: Process and Theory 4

WOMEN’S STUDIES FOCUS AWARD

Cascade Campus

Liberal Arts & Mathematics Division
Terrell Hall (TH), Room 220
503-978-5251

Sylvania Campus
Social Science Building (SS), Room 215
503-977-4289

Rock Creek Campus
Building 3, Room 201
503-614-7539

www.pcc.edu/pcc/pro/progs/ws/

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. Introduction to 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 503-977-4265 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 credit hours 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: 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
503-788-6255

Cascade Campus
Terrell Hall (TH), Room 220
503-978-5251

Rock Creek Campus
Building 3, Room 201
503-614-7539

Sylvania Campus
Social Science Building (SS), Room 215
503-977-4192

[www.pcc.edu/prepare/basic/](http://www.pcc.edu/prepare/basic/)

**DESCRIPTION**

A non-credit program for self-improvement designed to expand basic skills for students whose abilities range from underprepared 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 throughout each term. Students needing special assistance such as an interpreter, a reader, or a writer to participate in the orientation and intake sessions should contact the Disabilities Services (503-977-4341) 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 purchase books but are not required to do so. Day and evening classes are offered at all campuses and at many other locations in the community.

**COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</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.

**DEVELOPMENTAL EDUCATION**

Cascade Campus
Terrell Hall (TH), Room 220
503-978-5251

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6146

Rock Creek Campus
Building 2, Room 212
503-614-7414

Sylvania Campus
Social Science Building (SS), Room 215
503-977-4192

[www.pcc.edu/prepare/developmental/](http://www.pcc.edu/prepare/developmental/)

**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 Cascade, Rock Creek, Southeast Center 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**
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.
ALC 60, 61, 62, 63

**OTHER DEVELOPMENTAL EDUCATION COURSES**
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.
DE 21, 31, 50

**ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)**

[www.pcc.edu/prepare/esol/](http://www.pcc.edu/prepare/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 503-978-5670 (CA), 503-614-7150 (RC) or 503-977-8310 (SY).

**TESTING CENTERS**
Cascade 503-978-5234
Sylvania 503-977-4533
Southeast 503-778-6277
Rock Creek 503-614-7300

**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 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**

Portland Community College • 2010–2011 141
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 the website at: [http://www.pcc.edu/prepare/hs-completion/](http://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 credit hours.

High school graduation petitions will remain valid for one calendar year.

PCC PREP ALTERNATIVE PROGRAMS

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

PAVTEC is a consortium of 11 school districts, private industry, labor and other educational institutions including K-12 through graduate school. PAVTEC works with the 40 area high schools and PCC to provide quality articulated career technical programs. Among its responsibilities, PAVTEC coordinates the articulation (dual credit) program called “PCC Dual Credit.”

VOLUNTEER LITERACY TUTORING

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 the Portland metropolitan area.
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.

SMALL BUSINESS DEVELOPMENT CENTER (SBDC)

2025 Lloyd Center Mall
503-978-5080
www.pcc.edu/business/small-business-development

As part of the PCC Business and Professional Development Center, the Small Business Development Center (SBDC) is all about creating employers. The SBDC helps entrepreneurs start and grow their businesses. The SBDC is part of a network of 19 SBDCs located throughout the state of Oregon and more than 1000 SBDCs throughout the U.S. The SBDC uses experienced business professionals, focusing on essential business skills, to help entrepreneurs just starting their first business or experienced entrepreneurs developing their existing business to identify and make critical business decisions. The business advisors work with the entrepreneur one-on-one to design a customized plan of action. Business advising is a free confidential service available by appointment. The SBDC also provides excellent entrepreneurial education for all phases of business development – from starting a business to developing and growing an existing business. Classes and workshops are taught by experienced business professionals who provide practical information that entrepreneurs can use in the business the next day.

CAREER PATHWAYS PROGRAM

503-788-6271
www.pcc.edu/cp

The Career Pathways Program connects students to short term intensive educational programs (3-6 months) that prepare students to gain entry level 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 learn tools needed to get a job including writing resumes and cover letters and interviewing.

Pathways are available for entry-level occupations in various fields such as healthcare, business services and trades. Several vocational trainings are also available for English language learners including healthcare and office skills.

COMMUNITY & CONTINUING EDUCATION

Community and Continuing Education
503-788-6266
www.pcc.edu/communityed

PCC’s Community Education Department 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, Professional Enhancement 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, the classes are designed for adults and are typically offered during evenings or on weekends to accommodate professional schedules.

Courses are open to everyone sixteen years old and older and feature local experts as instructors. Classes are offered at PCC campuses, in neighborhood locations throughout the Portland metro area, and also online. Continuing Education courses offer busy professionals the...
GENERAL EDUCATION LIST/DISCIPLINE STUDIES

Candidates for the Associate of Arts Oregon Transfer (AAOT) may use any course listed in the AAOT column below to satisfy the required discipline studies requirements. The AAOT also requires cultural literacy. Please see AAOT cultural literacy column for acceptable courses.

Candidates for the Associate of Science Oregon Transfer in Business (ASOT) may use any courses in the ASOT Business column listed below to satisfy the distribution requirements.

Candidates for the Associate of Applied Science (AAS) and the Associate of Science (AS) and the Associate of General Studies (AGS) may use any of the courses in the AAS, AS, AGS column listed below to satisfy the distribution requirements.

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## General Education/Discipline Studies

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quickest and surest route to maintaining and enhancing their professional certifications. Classes offer CEU hours 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. Options include: electrical license renewal, insurance and tax workshops, home inspection certification and renewal, real estate and appraiser license renewal. For more information, contact 971-722-2917.
Non-credit classes do not meet the federal requirements for financial aid or most Veteran's benefits, are not equivalent to credit hours and may not be used toward PCC certificates and degrees.

INTERNATIONAL PROGRAMS
International Customized Contract Training
503-533-2889
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
503-731-6888
www.pcc.edu/cbi
cbi@pcc.edu

PCC’s CLIMB Center for Advancement provides continuous learning for individuals, management and business. CLIMB connects the business community to Portland Community College’s vast resources. CLIMB uses industry experts, as well as faculty, to provide a wide array of solutions to businesses and professionals, including: needs assessment, training, education, skill upgrades in health, IT and other professional development areas. CLIMB’s services are also flexible – meeting the needs for one worker, one business or an entire industry-wide effort. CLIMB helps connect businesses to current PCC programs, customizes specific training solutions for an organization, and creates trainings specific to meet the needs of various businesses and professionals. Whether it is preparing staff for new technology or offering a stress management workshop, these programs are designed to encourage both professional and personal growth.

CLIMB ORGANIZATIONAL TRAINING & DEVELOPMENT
www.pcc.edu/climb
CLIMB Organizational Training & Development is a premier provider of customized training and development solutions for business, industry and government worldwide. Customized and Workforce Training develops solutions that help maximize businesses’ profitability and sustainability in the global marketplace.

Customized & Workplace Training offers training and development services include consulting, leadership and management development, LEAN business process implementation, occupational language services, safety and health programs, technical training, basic skills training, and workforce programs. Programs are customized to meet each client’s individual needs and delivered at times and locations convenient to the client.

CLIMB FOR HEALTH CARE PROFESSIONALS
503-731-6633
www.pcc.edu/business/climb

As part of the PCC Business and Professional Development Center, 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; American Heart Association (AHA) training through its AHA designated Community Training Center. Choose from traditional classroom format, customized on-site training or distance education.

COMPUTER AND PROFESSIONAL EDUCATION PROGRAM
503-788-6200
www.computers.pcc.edu/climb

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.

DISTANCE LEARNING
www.distance.pcc.edu

Distance learning provides students an opportunity to earn college credit by participating in a variety of nonclassroom oriented 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 email, 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.

TELE COURSES (TV)

Sylvania Campus
TCB Building 116
503-977-4730 or 503-977-4655

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
503-977-4730 or 503-977-4655

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
503-977-4405, 503-977-8585

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 NP 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 may specify whether this grade system option is unavailable for each course in its control.

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 deadlines 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 deadlines 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. By the end of the second week of the term, faculty are required to assign a mark of NS (see “Marks”) and deny access to any students that do not attend during the first two weeks of the term.
8. Faculty may assign a mark of NS (see “Marks”) and deny access to any registered students if they do not attend the first class session.
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: superior examination scores, consistently accurate and prompt completion of assignments, ability to deal resourcefully with abstract ideas, superior 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 efficient 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 grading system.
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 prior to the completion of 80% of the course's term.

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 within the first two weeks of a term to indicate that a student has never attended class.
2. Students who fail to drop or withdraw before the completion of 80% of a course's term 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. Courses with grades of D, F, and NP, or marks of I, CIP, and CIPR may be repeated for a higher grade.
3. The first earned grade of C, P, or better will count in the accumulated credit total.

**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 student 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 procedures.

**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. Between the published drop deadline and the completion of 80% of a course's term, Students shall be able to withdraw from any registered class by completing the official drop/withdraw process.
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 completion of 80% of a course's term, or a grade will be assigned by the instructor.

**STANDARDS FOR STUDENT 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.

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 STUDENT PROGRESS POLICY**
1. Students enrolling for a degree, certificate or diploma must achieve Satisfactory Academic Progress; i.e., must achieve a minimum 2.00 GPA.
2. Student failing to achieve satisfactory progress shall be assisted by program faculty or student development staff. Progress interventions will be as follows:
   - **Academic Alert**—At the end of the first term of unsatisfactory progress, students will be notified that they are in academic alert status. They will be encouraged to seek assistance to prevent a recurrence of the problem.
   - **Academic Probation**—At the end of the second consecutive term of unsatisfactory progress, students will be notified that they have been placed on academic probationary status. They will not be allowed to register without the permission of an academic advisor, counselor, or program faculty member.
   - **Academic Suspension**—At the end of the third consecutive term of unsatisfactory progress, students will be notified that they are suspended from the institution for one year.
3. In addition, students are expected to complete at least half of all credits attempted. Currently enrolled, degree-seeking students who: a) attempted 24 or more credits during the previous academic year and b) failed to complete 50% of those credits will be identified annually. Those students will receive information about college resources and assistance from the dean of student development. No sanctions will be imposed.

**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. 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 form. You must be a current credit PCC student to request a transfer credit evaluation. Submit this form after you have requested official transcripts from all schools where you have transfer coursework; your evaluation cannot be completed until we have received all of your transcripts. 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.

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 a non-refundable $10 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 credit hour 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.

Keep in mind, 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
Students who have taken college level courses in high school under the Advanced Placement Program may receive college credit pending official copies of test results. Credit awarded will vary based on scores received. To request a copy of Advanced Placement courses 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/testing/.

Advanced Placement Program
PO Box 6671
Princeton, NJ 08541-6671
1-888-225-5427

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. Credit is given for a minimum score of 50. CLEP credit is not given for English language or foreign languages. For a list of exams accepted by PCC and credit received please see  http://www.pcc.edu/resources/student-records/credit-acceptance.html

Further information on how and where CLEP exams may be taken can be found at the address listed below or the following website: www.collegeboard.com/testing/.

CLEP – Transcript Services
PO Box 6600
Princeton, NJ 08541-6600
1-800-257-9558

MILITARY SERVICE CREDIT
PCC equivalencies may be granted for formal military courses after careful evaluation of transcripts, records and information provided in the “Guide to the Educational Experiences in the Armed Services.” Block credit is not granted and only the subject areas taught by PCC will be considered. Contact the Student Records Office for details.

MILITARY SERVICE PHYSICAL EDUCATION CREDIT
Two hours of credit may be granted for military training. A copy of the DD 214 is required.

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 credit hours 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.

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.

HONOR SOCIETIES

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/

DISCLOSURE OF STUDENT RECORDS AND DIRECTORY INFORMATION

PORTLAND COMMUNITY COLLEGE BOARD POLICY STUDENT RECORDS B407

The PCC district shall follow all applicable state and federal laws, rules, and regulations which apply to student records. All information contained in the college records which is personally identifiable to any student shall be kept confidential and not released except upon prior written consent of the subject student or upon the lawful subpoena or other order of a court of competent jurisdiction. Student information may be shared among college faculty and staff on an official (need to know) basis.

EDUCATIONAL RECORDS POLICY

The PCC district follows all applicable state and federal laws, rules and regulations that apply to Student Records. The Family Educational Rights and Privacy Act (FERPA) affords students certain rights regarding their educational records. They are: The right to inspect and review the student’s records. The student may request to review his/her records by submitting a written request to the Records Office having custody of such records;

- The right to seek amendment of the student’s records that the student believes are inaccurate, misleading or otherwise in violation of the student’s privacy rights. Requests for amendment of records must be in writing and must describe the specific portions or specific record(s) the student wishes to have amended, instructions as to the change desired, and reasons why the change is justified;
- 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 EMAIL)

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
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 effective fall 2009. 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.

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. 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.

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 Pres-

ident 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/animal.htm

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.

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 alleged violation of due process within 7 calendar days of its filing.

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:
Academic Integrity

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 to the division dean 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 or 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 & 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 external funding sources operated outside of the comprehensive campuses may adopt separate grievance procedures consistent with Portland Community College's Grievance Procedure, the program's goals, and the principle of due process for all parties.

Concerns involving harassment or discrimination by a college staff member on the basis of race, color, religion, sex, sexual orientation, age, national origin, disability, or veteran status should be directed to the college's Affirmative Action Officer. Concerns involving harassment or discrimination by a student on the basis of race, color, religion, sex, sexual orientation, age, national origin, disability, or veteran status should be directed to the campus Dean of Student Development.

Any other complaint about college services, programs, or activities not addressed in the Student Rights Section of the Student Rights and Responsibilities Handbook should be put 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.

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: Such relationships may undermine the real or perceived integrity of the supervision provided, and the particular trust inherent in the student-faculty relationship.

- 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, 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-harrassment 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.

UNACCOMPANIED CHILDREN

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 serves a total of 86,000 students through credit and noncredit instruction each year. The following reflect characteristics of students enrolled fall 2009.

<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>
</tr>
<tr>
<td>Female</td>
<td>54%</td>
<td>60.7%</td>
</tr>
<tr>
<td>Male</td>
<td>46%</td>
<td>39.3%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>72%</td>
<td>61.7%</td>
</tr>
<tr>
<td>African-American</td>
<td>6%</td>
<td>6.2%</td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
<td>1.5%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Asian</td>
<td>8.6%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>.2%</td>
<td>.1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8.2%</td>
<td>15.2%</td>
</tr>
<tr>
<td>International</td>
<td>3.1%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Multi-Racial .4% .5%

During the fall semester of 2006, 1,155 first time, full time, certificate or degree seeking students entered PCC. After three years, 12.7% of the students who graduated from PCC and 26% had transferred to other higher education institutions.

STUDENTS RIGHT TO KNOW

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.

Director, Affirmative Action:
722 SW 2nd 3rd floor Rooms 300 & 301
971.722.5841

District Section 504 Coordinator:
Maria Mendez, CA SSB 300, 503.978.5851

Title IX Coordinator:
Dick Magruder, CA PE 101, 503.978.5513

PCC CORE OUTCOMES

GRADUATES OF PORTLAND COMMUNITY COLLEGE SHOULD BE ABLE TO:

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/](http://www.pcc.edu/resources/academic/core-outcomes/)

**AAS DEGREE AND CERTIFICATES OUTCOMES**
Please see: [www.pcc.edu/resources/academic/degree-outcome/index.html](http://www.pcc.edu/resources/academic/degree-outcome/index.html)

**PORTLAND COMMUNITY COLLEGE**

Portland Community College is the largest institution of higher learning in Oregon, serving more than 900,000 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 88,000 students annually.

The college is governed by a seven-member board of directors, elected by zones for four-year terms. The board selects the president and approves the hiring of other staff and faculty, approves the college budget and establishes policies which govern the operation of the college.

They meet monthly, usually on the third Thursday. For meeting information, call 503-977-4334.

**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 Vernon schools 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.

Thanks to the bond measure, the college opened new buildings at all three comprehensive campuses in 2003 and 2004, and built a new Southeast Center on SE 82nd and Division in January 2004. Preston Pulliam’s was hired as PCC’s fifth president in 2004. In 2008, area voters approved a $374 million bond measure-largest ever in the state of Oregon- to improve technology, meet workforce demand needs and address rising enrollment. Willow Creek Center is the first building to come online as a result of this bond planning and work gets underway all across the district in 2010-2011.

**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**
Campus President: Algie Gatewood
705 N Killingsworth
Portland, Oregon, 97217

PCC’s Cascade Campus is located in the urban heart of the city of Portland and serves about 18,000 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, Oregon, 97229-1744

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**
Campus President: Linda Gerber
12000 SW 49th Avenue
Portland, Oregon, 97219-7132

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: Craig Kolins
2305 SE 82nd
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 four main sites:

**Southeast Center**
2305 SE 82nd and Division
Portland, Oregon 97216

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, Oregon 97214-3336

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, is what used to be the Center for Business and Industry and offers training in computer education, customized and workplace training, health profession and small business to employers and employees alike. The center provides access to a broad range of training areas, facilities that meet the latest in industry standards and technical capabilities.

**Willow Creek Center**
241 S.W. Edgeway Drive
Beaverton, OR, 97006

The Willow Creek Center (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. 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, located on Tri-Met's Blue Max Line, include 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
Portland, Oregon 97218

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
503-615-6801

www.pcc.edu/hec

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.

**PCC CONTRACTED EDUCATIONAL SERVICE DISTRICTS:**
 Tillamook Bay Community College
2510 First Avenue
Tillamook, Oregon 97141
503-842-8222
Columbia Gorge Community College  
400 E Scenic Drive  
The Dalles, Oregon 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. Information regarding accreditation from professional associations may be obtained by contacting the department chairperson of the individual program.

**THE PCC FOUNDATION**

503-977-4382

“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.

**PCC FOUNDATION BOARD OF TRUSTEES**

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<tr>
<td>Betty Duvall, President</td>
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<tr>
<td>Peter Bauer, Immediate Past President</td>
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<tr>
<td>Jeff Van Raden, Vice President</td>
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<tr>
<td>Cheryl Burgermeister, Secretary-Treasurer</td>
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<tr>
<td>Ella Booth</td>
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<tr>
<td>Thane Cleland</td>
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<tr>
<td>Isaac Dixon</td>
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<tr>
<td>Denise Frisbee, ex-officio</td>
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<tr>
<td>Mike Gentry</td>
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<td>Norma Jean Germond</td>
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<td>Jim Harper, ex-officio</td>
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<td>Cher Hinerman</td>
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<td>Sarah Petrone</td>
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<td>Harvey Platt</td>
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<td>Preston Pulliams, ex-officio</td>
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<td>Barbara Raz</td>
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<td>Mary Savage</td>
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*Many career and technical courses are applicable to the baccalaureate degree. Check with the BA-granting institution.*

** A number below 100 indicates a support course and a number above 299 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. The following prefixes describe the primary intent of the courses offered:

#199 and 299 courses in this discipline may or may not be considered LDC. Contact the student records department at 503-614-7100 if you have questions regarding a specific course.
AB 100 Autobody Basic Skills 12 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 101 AB Basic Skills I 6 Introduces oxy-acetylene welding, use of hand tools and shop equipment, types and placement of currently used auto body steels, type of construction and repair procedures including procedures used in replacing and aligning hoods, fenders and other body components.

AB 102 Auto Body Basic Skills II 6 Develops skills in use of and maintenance of MIG welders as applied to auto body repair. Develops skills in repair of auto body metals. Damage analysis is discussed and small dents are reshaped to the original contour of the auto body panel.

AB 103 Panel Repair I 6 Develops skills in repair of small dents. Safe use of grinders, sanders, and assorted hand tools will be practiced. Paint preparation is discussed. Prerequisites: AB 101, AB 102.

AB 104 Panel Repair II 6 Develops skills in repair of damaged panels on program and customer vehicles. Safe use of grinders, sanders, and assorted hand tools will be practiced. Prerequisites: AB 101, AB 102.

AB 105 Frame Analysis & Repair 12 Covers structural misalignment analysis, use of measuring systems, structural repair procedures, and wheel alignment. Prerequisites: AB 100 or AB 101 and AB 102.

AB 106 Panel Repair 12 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.

AB 110 Auto Painting IA 6 Introduces care and use of all paint equipment, shop safety and surface preparation for metallic color materials. Emphasizes urethane undercoat, spot repair, color matching, and blending with urethane base coat. Covers masking techniques.

AB 111 Auto Painting IB 6 Introduces care and use of all paint equipment, shop safety and surface preparation for metallic color materials. Emphasizes urethane undercoat, spot repair, color matching, and blending with urethane base coat. Covers masking techniques.

AB 112 Auto Painting IIA 6 Introduces safe use of solid color enamel and single stage urethane systems. Emphasizes spot repair, color matching and blending. Covers surface preparation and proper masking techniques for these products.

AB 113 Auto Painting IIB 6 Introduces safe use of metallic enamel and single stage metallic urethane systems. Emphasizes spot repair, color matching and blending. Covers surface preparation and proper masking techniques for these products.

AB 114 Auto Painting IIIA 6 Introduces safe use of Base coat/Clear coat, Pearl coat, and Tri-coat urethane systems. Emphasizes spot repair, color matching and blending. Covers surface preparation and proper masking techniques for these products.

AB 115 Auto Painting IIIB 6 Review and practice all previously learned painting skills on customer and school-owned cars.

AB 116 Auto Painting I 12 Develops knowledge and skills in care and use of all painting equipment, shop safety, conservation of materials, surface preparation for application of paint, application techniques, color matching and basic taping techniques.

AB 117 Auto Painting II 12 Introduces safe use of single stage urethane, advanced masking techniques, small dent repair and detailing. Review and practice of all previously learned painting skills on customer and school-owned cars. Prerequisite: AB 116.

AB 118 Auto Painting III 12 Introduces safe use of pearl and tri-coat urethane base coat/clear coat systems. Emphasizes spot repair, color matching, blending and plastic part refinishing. Covers surface preparation and proper masking techniques for these products. Prerequisites: AB 116, AB 117.

AB 121 Estimating 3 Damage appraisal relating to collision repair and use of crash estimating guides are applied to major and minor vehicle damage.

AB 201 Panel Replacement 12 Covers replac- ing and used weld-on panels, such as rocker panels, quarter panels and rear body panels. Includes preparation and installation of cosmetic and structural weld-on panels.

AB 205 Technical Skills and Collision Repair 12 Develops knowledge and manipulation skills required for the complete repair of a collision damaged vehicle by understanding and testing the safety and comfort features found on current vehicles. Prerequisites: AB 100, 105, 106 and 201.

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. Department permission required.

AB 280B Cooperative Education: Auto Body Repair - Seminar Provides opportunity to share work experiences and receive feedback from students and instructors. Department permission required.

AB 9120 Auto Body Restoration 3 Develops knowledge and manipulation skills required for vehicle restoration by understanding the processes used in welding, metal forming and finishing, rust repair, and panel alignment.

AB 9121 Vintage Auto Restoration Process 2 Introduces restoration of antique and vintage automobiles. Develops knowledge in the process of researching, purchasing, and restoring all components pertaining to vintage vehicles.

ALCOHOL AND DRUG COUNSELOR

AD 101 Alcohol Use and Addiction 3 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.

AD 102 Drug Use and Addiction 3 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.

AD 103 Women and Addiction 3 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.

AD 104 Multicultural Counseling 3 Focuses on diversity of populations using addiction counseling services. Emphasizes developing sensitivity to relevant cultural differences and building skills in addressing them.

AD 105 Aging & Addiction 3 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 multi-cultural perspective is used, including the role of social class and gender issues.

AD 150 Basic Counseling and Addiction 3 Introduces basic skills required for establishing an effective professional helping relationship. Emphasizes in-class practice and feedback. Prerequisite: AD 101. Prerequisite/concurrent: WR 122.

AD 151 Basic Counseling Skills Mastery 1 Provides an opportunity to demonstrate a minimum level of facilitative skills required for initial practicum placement. Prove 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/concur-
AD 152 Group Counseling and Addiction 3 Provides exposure to the concepts of group process, group development and leader facilitation skills. Special emphasis on group therapy and the addiction counselor. Prerequisite: AD 101. Prerequisite/concurrent: WR 122.

AD 153 Theories of Counseling 3 Basic theories of counseling, emphasizing treatment of addiction. Developmental model of recovery is used as a basis for discussion and comparison of the various theories. Prerequisite: AD 101.

AD 154 Client Record Management and Addiction 3 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.

AD 155 Motivational Interviewing & Addiction 3 Designed to facilitate the acquisition of motivational interviewing counseling skills as applied to the area of addiction counseling. Prerequisites: AD 101, AD 150, AD 151, WR 121. Prerequisite or concurrent: WR 122.

AD 156 Ethical and Professional Issues 3 Covers ethical and legal issues relevant to the alcohol and drug counselor. Prerequisite: AD 101. Prerequisite/concurrent: WR 122.

AD 157 Motivational Interviewing Skills Mastery 1 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. Corequisite: AD 155.

AD 184 Men & Addiction 3 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. Course develops a framework for the essential elements of gender-specific treatment for boys and men.

AD 201 Families and Addiction 3 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.

AD 211 Alcohol & Drug: Special Studies 1 Not required for degree and may not be substituted for any required program courses.

AD 212 Alcohol & Drug: Special Studies 2 Not required for degree and may not be substituted for any required program courses.

AD 213 Alcohol & Drug: Special Studies 3 Not required for degree and may not be substituted for any required program courses.

AD 241 Prevention Theory and Practice 3 Provides knowledge of prevention basics including history, Risk/Protective Factors, research-based best practices, the prevention continuum of care, resiliency and assets. Builds skills in identifying community needs and planning comprehensive prevention programs. Includes professional responsibilities, scope of practice, cultural factors and ethics. Explores and evaluates alcohol, tobacco and other drug curriculums. Investigates how to match programs to target audiences.

AD 242 Community Organization 3 Provides knowledge of comprehensive community prevention planning. Focuses on developing competencies in effective planning, program design, evaluation and grant administration. Develops capacity to review and apply current research and integrate research-based best practices into planning and evaluation. Emphasizes skills needed to work with diversity.

AD 243 Planning and Evaluating Outcomes 3 Explores methods of influencing public policy. Shows how to apply current research to advocacy efforts. Demonstrates ways to communicate credible evaluation results to policy makers, funding sources and the media. Considers how to advocate for prevention resources and include research based best practices.

AD 250 Advanced Counseling and Addiction 3 Designed to enhance the professional knowledge and skills of counselors preparing to enter the field. It 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 or concurrent: WR 122. Co-requisite: AD 251.

AD 251 Advanced Counseling Skills Mastery 1 Focuses on increasing counselor empathy and communication skills. Demonstrate 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 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.

AD 270A Practicum: Addiction Field placement in an addiction counseling or DUID educational facility. Students are required to complete a minimum of two six month placements for a total of 18 credits. Prerequisites: AD 102, 105, 151, 152, 153, 154, 155, 156. Corequisite: AD 270B.

AD 270B Practicum: Addiction - Seminar 2 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. Corequisites: AD 270A.

AD 270C Prevention Practicum 3 Works with a prevention professional mentor to achieve knowledge of Addiction Counselor Certification Board of Oregon (AC-CBO), Alcohol, Tobacco and Other Drug Abuse Prevention Domains. Learns professional responsibilities and growth, cultural sensitivity and ethics. Prerequisites: AD 101, AD 102, AD 241, AD 242, WR 121. Prerequisite/concurrent: WR 122. Students must document two years of not abusing alcohol and other drugs, and pass the criminal history check as outlined in ACCBO Certified Prevention Specialist certification standards, and department approval.

AD 270D Prevention Practicum Seminar 2 Focuses on prevention specialist’s supervised learning experience including professional growth and responsibility, prevention specialist ethics, five professional domains of prevention, and integration of academic preparation with “real world” experience. Prerequisites: AD 101, AD 102, AD 241, AD 242, WR 121. Prerequisite or concurrent: WR 122. Corequisite: AD 270C. Students must document two years of not abusing alcohol and other drugs, and pass the criminal history check as outlined in ACCBO Certified Prevention Specialist certification standards, and department approval.

AD 278 Practicum Preparation 1 Provides student with the opportunity to demonstrate facility with the documentation required for the AOD practicum course, and develop an individualized plan for success in practicum. Prerequisite/Concurrent: AD 101, 102, 150, 151, 156, and WR 121.
AM 101 Engine Repair I 4 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.

AM 102 Electrical Systems I 4 Covers electrical theory, schematic symbols, battery and starter theory, operation, diagnosis and repair.

AM 103 Engine Performance I 4 Covers use of automotive scan tools, operation and testing electrical 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.

AM 104 Steering and Suspension Systems I 4 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.

AM 105 Brake Systems I 4 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.

AM 106 Heating and Air Conditioning Systems I 4 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.

AM 107 Manual Drive Train and Axles I 4 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.

AM 108 Introduction to Automotive Systems I 4 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.

AM 112 Electrical II 4 Read schematics and work on charging systems and accessories. Prerequisites: AM 108, 102.

AM 113 Engine Performance II 4 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. Prerequisite: AM 108, AM 101, AM 102, AM 103 and AM 112.

AM 114 Steering and Suspension Systems II 4 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.

AM 115 Brake Systems II 4 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.

AM 117 Manual Drive Train and Axles II 4 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.

AM 122 Electrical III 4 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 102, 108 and 112.

AM 123 Engine Performance III 4 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.

AM 125 Brake Systems III 4 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 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.

AM 133 Engine Performance IV 4 Continuation of Unit 23. Prerequisites: AM 108, AM 101, AM 102, AM 103, AM 113, AM 123 and Chair permission, 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.

AM 137 Automatic Transmission/Transaxle II 4 Work on approved customer automobiles 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.

AM 143 Engine Performance 5 4 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, 102, 103, 113, 123, 133.

AM 153 Engine Performance VI 4 Continuation of AM 143. Prerequisites: AM 108, 101, 102, 103, 113, 123, 134, 133.

AM 280A Cooperative Education: Automotive Service Work outside of the classroom at a job performing diagnostic and repair work under the supervision of a professional automotive technician. Department permission required.

AVIATION MAINTENANCE TECHNOLOGY

AMT 101 Introduction to A&P (Airframe & Powerplant) 1 Familiarization with aviation maintenance technology, including: program requirements, safety, aircraft and engines, general-purpose common hand tools, work ethics and career opportunities. This course is a prerequisite for all other AMT courses.

AMT 102 Aircraft Electricity I 4 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.

AMT 105 Aviation CFRs and Related Subjects 4 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.

AMT 106 Aircraft Applied Science 4 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.

AMT 107 Materials & Processes 4 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.

AMT 108 AMT Practicum/General 2 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 the AMT department Math test with 70% or higher; MTH 60 or Department Math test with a 70% or higher.

AMT 109 Assembly & Rigging 4 Covers methods of assembly and rigging commonly used in preparing both fixed and rotary wing aircraft for a safe test flight. Includes analysis of test flight reports and recommended rigging corrections necessary to produce a safe and efficient aircraft. Prerequisites: AMT 203, AMT 204, MTH 60 or with AMT Department Chair permission, the AMT department Math test with 70% or higher.

AMT 115 Aircraft Structures & Inspection 4 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.

AMT 117 Reciprocating Engine Theory & Maintenance 4 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.

AMT 120 Propellers and Engine Installation 4 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.

AMT 121 Turbine Engine Theory and Maintenance 4 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.

AMT 123 Ignition Systems 4 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.

AMT 124 Fuel Metering Systems 4 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 Math test with 70% or higher.

AMT 203 Aircraft Electricity II 4 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 a 70% or higher.

AMT 204 Aircraft Electricity III 4 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 a 70% or higher.

AMT 208 Aircraft Systems 4 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.

AMT 211 Composite Structures 4 Covers modern bonded structures such as honeycomb and laminated components. Includes discussion of inspection and limited repairs to wood structures. Examines methods of repairing 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.

AMT 222 Reciprocating Engine Overhaul 4 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.

AMT 225 AMT Practicum/Powerplant 2 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.
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.

APR 100 Exploring Trades & Apprenticeship 1 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.

APR 101 LME: Electrical Theory Fundamentals 3 Covers electrical theory and math for computing the values of voltage, amperage, resistance and power. Also covers various types of electrical circuits (series, parallel). 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.

APR 102 LME: DC Motors 3 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/AC waveform. Electrical safety, principles of inductance, inductive reactance, capacitance and capacitive reactance, various types of capacitors, capacitor testing and their use in industrial environments will also be discussed. Prerequisites: APR 101 and TE 9631.

APR 103 LME: AC Motors & Transformers 3 Covers the construction, theory and application of transformers; three phase AC motors and single phase AC motors, includes theory and application of three phase windings namely the Delta and Wye connection. Introduces power factor as applied to an electrical circuit, deciphering motor name plate data, and electrical safety standards. Prerequisites: APR 102 or TE 9632.

APR 104 LME: Luminaries & Equipment 3 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.

APR 121 Introduction to Electricity and Circuits 3 Covers general atomic theory, electron flow in conductors, calculations of Ohm’s 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.

APR 122 AC/DC Motors Principles 3 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.

APR 123 AC Theory for Motors and Transformers 3 Focuses on alternating current power distribution, transformers, motors, storage cells, solid state semiconductor devices and three phase motor winding connections (Delta and Wye) as they apply to a heavy industrial environment. Prerequisites: APR 122 or TE 9611.

APR 124 Electrical Systems Operations 3 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.

APR 125 Electrical Circuits and Wiring Methods 3 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, layout, knockout 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.

APR 126 Electrical Systems Installation per NEC 3 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.

APR 131 Refrigeration I 2 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).

APR 132 Refrigeration II 2 Cover and analyze 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. APR 132 and FMT 102 cannot both be taken for credit. Prerequisites: APR 131 or FMT 101 or TE 9242.

APR 133 Refrigeration III 2 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.

APR 150 Pre-Apprenticeship Construction Training 6 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.

APR 200 Trades Preparation 8 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: Placement in MTH 60 or higher or department permission.

APR 201 Electrical Motor Controls 2 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.

APR 202 LME: Electrical Code Level I 4 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.

APR 203 LME: Electrical Code - Level II 4 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.

APR 204 LME: Electrical Code - Level III 4 Provides a working knowledge of the NEC. Assists LME apprentices in preparing for the state electrical exam. Topics include: Special Equipment including electric signs, cranes, 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 reference
materials, safety standards and practice exams. Prerequisites: APR 203 or TE 9637.

APR 221 Advanced AC Circuitry 3 Includes the theory of alternating current and power. Also includes alternating current, 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.

APR 222 Hazardous Locations 3 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.

APR 223 Motor Control Operations including PLC's 3 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.

APR 224 Electrical Code - Level I 4 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.

APR 225 Electrical Code - Level II 4 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.

APR 226 Electrical Code - Level III 4 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.

APR 230 National Electrical Code 3 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.

APR 231 National Electrical Code II 3 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.

ARCHITECTURAL DESIGN AND DRAFTING

ARCH 100 Graphic Communication for Designers 3 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.

ARCH 101 Architectural Graphics I 3 Introduction to design process and drawing for residential design focusing on design of a new single family residence. Prerequisite: ARCH 110.

ARCH 102 Architectural Graphics II 3 Introduction to the design process and drawing for commercial design focusing on design of new light frame commercial building. Prerequisite: ARCH 110.

ARCH 110 Introduction to Architectural Drawing 2 Covers basic Architectural drawing skills including lettering, line quality, plans, elevations, sections and axonometric drawings.

ARCH 111 Working Drawings I 3 Covers standards of architectural drafting and preparation of construction documents for typical residential construction. Construction process and terminology will also be examined. Prerequisite: ARCH 110 and (ARCH 126 or ID 125) Recommend: ARCH 121, 124.

ARCH 112 Working Drawings II 3 Covers standards of architectural drafting and preparation of construction documents for typical commercial construction. Construction process will also be examined. Prerequisites: ARCH 110. (ARCH 126 or ID 125) Recommend: ARCH 121, 124.

ARCH 113 Site Planning 2 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. (ARCH 126 or ID 125) Recommend: ARCH 121, 124.

ARCH 121 Structural Systems I 2 An overview of structural systems, including identification of structural members, loads and load paths and reading structural framing plans. Prerequisite/concurrent: ARCH 124.

ARCH 122 Structural Systems II 4 Covers sizing of wood structural members (rafters, joists, beams, etc.). Prerequisite: ARCH 121, MTH 60 or equivalent placement test scores.

ARCH 123 Structural Systems III 4 Covers retaining walls, concrete foundations, structural steel framing, and sizing for wind and seismic loads. Prerequisite: ARCH 122, MTH 65 or equivalent placement test scores.

ARCH 124 Introduction to Building Systems 3 An overview of residential building systems, including building construction, and heating, cooling, plumbing, electrical, and passive solar systems.

ARCH 126 Introduction to AutoCAD 3 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.

ARCH 127 Introduction to Google SketchUp 3 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.

ARCH 131 Sustainable Building Structures 4 Focuses 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.

ARCH 132 Residential Building Codes 2 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.

ARCH 133 Commercial Building Codes 2 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.

ARCH 136 Intermediate AutoCAD 3 In-depth study of computer-aided-drafting using AutoCAD software and its applications to architecture. Prerequisite: ARCH 126 or ID 125.

ARCH 137 AutoCAD Architecture 3 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.

ARCH 140 Introduction to CHIEF ARCHITECT 3 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.

ARCH 161 Blueprint Reading-Part 1 2 Introduces methods to identify, communicate and apply information found on typical residential construction drawings.

ARCH 162 Blueprint Reading-Part II 2 Introduces methods to identify, communicate and apply information found on typical commercial construction drawings. Recommended: ARCH 161.

ARCH 200 Principles of Architectural Design 4 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.

ARCH 201 Residential Studio 6 Covers design development and construction documents for a new single family residence. Prerequisites: ARCH 101, 111, 113, 122, 124, 132, 136, and ART 215.

ARCH 202 Commercial Studio 6 Covers design development and construction documents for a light frame commercial building. Prerequisites: ARCH 102, 112, 122, 124, 133, 136, 256.

ARCH 204 Green Residential Studio 4
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.

ARCH 224 Active and Passive Building Systems 4
Advanced study of structural systems, mechanical systems, specifications, and building codes in residential and small commercial buildings. Prerequisite: ARCH 121, 124.

ARCH 237 Introduction to Autodesk Revit 3
Introduces Autodesk Revit, a parametric 3D modeling software, and its applications to architecture and covers the creation, retrieval and modification of drawings using basic Revit commands.

ARCH 246 AutoCAD 3D and Solid Modeling 3
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.

ARCH 247 Intermediate Revit Architecture 3
Students must be capable of reading and communicating in the English language and may be required to pass a listening competency test administered by the department.

ARCH 256 Detail Drawing with AutoCAD 3
Develops skills in creating construction detail and section drawings using appropriate scale, line weights, symbols and annotations. Prerequisite: ARCH 136.

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 Introduction to Art 4
Addresses seeing, experiencing and appreciating the urban world as a reflection of human interaction with the socio-political and physical environment, such as with architecture, gardens, fountains, malls and public spaces. Examines how cities express the values, technology, geography and economic structure of many cultures in the light of aesthetic, historic, and critical factors. The Intro to Art series 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 102 Introduction to Art 4
Addresses issues of fine art, particularly painting, sculpture and drawing, in terms of experiencing, appreciating and understanding their role in our lives. Art is examined in the light of aesthetic, historic, and critical issues. The Intro to Art series 101, 102, 103 may be taken in any order. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 103 Introduction to Art 4
Addresses issues relating to design in our daily lives, particularly graphic design, and may include commercial, industrial, crafts, and product design. Examines how design expresses the values, technology, economy and taste of our culture in light of aesthetic, historic and critical issues. The Intro to Art series 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 115 Basic Design 3
Black and white design foundations studio experience centers on creative problem-solving, developing perceptual awareness and understanding and establishing critical skills and personal artistic vision. Use a broad range of materials, techniques and projects to design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 may be taken in any sequence.

ART 116 Basic Design 3
Color and design foundations studio experience centers on creative problem-solving, developing perceptual awareness and understanding, and establishing critical skills and personal artistic vision. Use a broad range of materials, techniques and projects to explore color and design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 may be taken in any sequence.

ART 117 Basic Design 3
Three-dimensional foundations studio experience centers on creative problem-solving, developing perceptual awareness and understanding, and establishing critical skills and personal artistic vision. Use a broad range of materials, techniques and projects to explore three-dimensional design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 may be taken in any sequence.

ART 131 Introduction to Drawing 3
A studio experience exploring basic drawing techniques, materials and concepts while addressing historical and contemporary issues. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit.

ART 140 Digital Photography 3
Introductory course emphasizing knowledge of the camera, development of computer skills in preparing and outputting images, and exploration of visual design and composition. May be taken three times for credit. Recommended: Basic computer skills and WR 115.

ART 141 Introduction to Photography (Non-darkroom) 3
Covers camera operation, selection and use of film, filters, lenses, flash units and other accessories. Students shoot 35mm color slides and have them processed commercially. Must own, or have access to a 35mm camera with adjustable exposure controls.

ART 142 Introduction to Photography (Darkroom) 3
Introductory course in black and white photography, emphasizing knowledge of the camera, development of darkroom skills, and exploration or visual design and composition. Should own or have access to a 35mm camera with adjustable exposure controls. May be taken three times for credit. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 143 Photography II 3
Course follows ART 142 in sequence, and is devoted to further the development of technical photographic skills, and to the continued exploration of visual design theory and the conceptual approaches involved in making art. May be taken three times for credit. Prerequisites: ART 142 and its prerequisites.

ART 181 Painting I 3
A studio experience exploring basic painting techniques, materials, and concepts while addressing historical and contemporary issues. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit.

ART 197 Artist's Skills/Practical Issues 3
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.

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.

ART 204 History of Western Art 4
Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment of a particular era. Objectives center 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.

ART 205 History of Western Art 4
Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Objectives center on viewing, analyzing and comparing many art forms in an historical context, and covers Late Antiquity, Early Christian and Medieval periods, beginning about 500 BC. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 206 History of Western Art 4
Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Objectives center on viewing, analyzing and comparing many art forms in an historical context, and covers the Renaissance and Baroque periods, beginning about 1300 AD. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 207 History of Asian Art 4
Explores and analyzes the visual arts 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.

ART 208 History of Asian Art 4
Explores and analyzes the visual arts 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.
analyzes 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.

ART 209 History of Asian Art 4 Explores and analyzes 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.

ART 210 Women in Art 4 Covers the work of women artists from antiquity to the present. The works of the most important women artists from each period will be studied in relation to the changing roles of women in society and to the art produced contemporaneously by men. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 211 Modern Art History - 19th Century Art in Europe 4 The Nineteenth Century saw the beginning of the modern world and modern societies in Europe. 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.

ART 212 Modern Art History - Early 20th Century Art 4 The turn of the Twentieth Century witnessed 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.

ART 213 Modern Art History - Art Since 1945 4 World War II ended the supremacy of Europe in the visual art world and focused attention on America. Examines and analyzes art since 1945 to explore the ideas behind it, to reveal our culture and values, and to gain a greater understanding and appreciation of contemporary art. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ART 215 History of American Residential Architecture 3 Examines the historical origins and elements of American house styles in order to develop insights into the residential architecture of our own era.

ART 217 Understanding Comic Art 3 Examines comics art as a medium of visual communication. Aesthetic qualities unique to comic books and graphic novels analyzed in artistic, historical, and narrative contexts using seminal texts. Strongly recommend: Placement into WR 121 and RD 115.

ART 218 Lettering Calligraphy 1 Cover 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.

ART 220 Advanced Lettering and Seminar 2 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.

ART 231 Drawing 3 A studio experience exploring ways of seeing and basic drawing techniques, materials and concepts while addressing historical and contemporary issues. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit.

ART 237 Life Drawing 3 Students study and draw the human form from professional models nude and clothed. Applying various drawing techniques, and concepts, students study the structure, form and proportions of the human figure. Emphasis is upon personal progress as an artist with attention to composition. May be taken three times for credit.

ART 240 Digital Photo II 3 A studio experience in advanced digital photography. Develops computer proficiencies and aesthetic awareness in preparing and outputting images through digital capture, manipulation, editing, and presentation; explores visual culture and criticism past and present. May be taken three times for credit. Prerequisites: ART 140 or instructor permission.

ART 243 The Photographic Portfolio 3 Provides framework within which students may pursue their unique photographic vision. Explores role of photography in the arts, and rights and responsibilities of the photographic artist. Work in black and white and/or color (color processed at student expense). May be taken three times. Prerequisite: ART 143.

ART 244 Glass Casting 3 Provides an introduction to and thorough studio experience investing the mechanical and design concerns necessary to make molds for glass casting and then casting in glass. Includes 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. Critical, discussion, and presentations establish critical skills necessary to evaluate glass casting, explore artistic intent, examine structural solutions, and expand perceptual awareness. Includes demonstrations, lectures, slides and audiovisual materials. May be taken three times for credit. Recommended: ART 121 and RD 115.

ART 250 Ceramics III 3 An introductory studio experience exploring ceramic form, processes, techniques and concepts while addressing historical and contemporary issues. Students will use a variety of techniques to develop and encourage creative problem solving. Critical, discussions, and ceramic presentations establish critical skills necessary to evaluate ceramics, explore artistic intent, examine structural solutions, and expand perceptual awareness. Course includes demonstrations, lectures, slides and audiovisual materials. May be taken three times for credit.

ART 256 Ceramics II 3 Allows further exploration in all aspects of clay processes: development of ideas, care and preparation of clay, skills and understanding related to clay work on and off the potter’s wheel, glazes and firing procedures. May be taken three times for credit.

ART 270 Printmaking 3 Laboratory course in print art focusing on specific techniques and materials each term as well as standards for critical analysis. References the history of the print and the diverse historical and cultural context of the visual arts. Primarily a studio experience with supporting slide lectures and other visual media. Critiques of student work are held regularly. Recommended: ART 115, 116 and 131. May be taken three times for credit.

ART 273 Life Painting 3 Students study and paint the human form from professional models, nude and clothed. Applying various painting techniques and concepts, students study the structure, form and proportions of the human figure. Emphasis is upon personal progress as an artist with attention to composition. Students will paint from a nude model. May be taken three times for credit.

ART 277 Experimental Media 3 Students introduce 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 contemporary and historical art making. Course intended for students willing to formulate their own artistic directions. May be taken three times.

ART 281 Painting II 3 A studio experience exploring ways of seeing and basic painting techniques, materials, and concepts while addressing historical and contemporary issues. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit. Recommended: ART 116 and ART 181.

ART 284 Watercolor I 3 A studio experience exploring basic watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to become more visually literate. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit.

ART 287 Watercolor II 3 A studio experience exploring basic and more advanced watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to become more visually literate. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit. Prerequisite: ART 284 or instructor permission.

ART 290 Sculpture: Plaster/Clay 3 A studio experience exploring basic sculptural concepts and techniques, and concepts while addressing historical and contemporary issues to become more visually literate. A conceptual framework for critical analysis is presented along with basic art theory. May be taken three times for credit.
AMERICAN SIGN LANGUAGE

Course Descriptions

ART 291 Sculpture: Carving 3 A studio experience exploring sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues. Students will develop creative problem solving while using clay and plaster to create sculptures. Critiques, discussions, and sculpture presentations establish critical skills necessary to evaluate sculpture, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. May be taken three times for credit. Recommended: ART 291, 292, or 293.

ART 292 Sculpture: Mixed Media 3 Studio experience exploring sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues. Uses a variety of materials and techniques to develop and encourage creative problem solving. Critiques, discussions, and sculpture presentations establish critical skills necessary to evaluate sculpture, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Course emphasizes the use of mixed media in sculpture. May be taken three times for credit.

ART 293 Figure Sculpture 3 A studio experience exploring sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues relating to figure sculpture. Students study and sculpt the human form from professional models, nude and clothed. Applying various sculpting techniques and concepts, students study the structure, form and proportions of the human figure. Critiques, discussions, and sculpture presentations establish critical skills necessary to evaluate figure sculpture and explore the expressive potential of the human form. May be taken up to three times for credit.

ART 294 Sculpture: Welding 3 A studio experience exploring sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues. Students will develop creative problem solving skills through making sculpture with welded steel. Introduces oxy-acetylene welding and cutting and mig welding. Critiques, discussions, and sculpture presentations establish critical skills necessary to evaluate sculpture, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. May be taken three times for credit. Recommended: ART 291 or ART 293.

AUTOMOTIVE SERVICE EDUCATIONAL PROGRAM

ASEP 100 Introduction to ASEP 8 Provides overview of automotive systems and the automotive industry. Studies use of service manuals, tool use and purchase, precision measurement, safety procedures and basic vehicle service, such as, change oil and filter (LOF) and pre-delivery inspections (PDI). Also spend nine weeks at the dealership on a trial basis. Placement into MTH 55 or higher, WR 121 and attainment of a Dealership sponsor required.

ASEP 101 Electrical/Electronic and HVAC Systems 12 Study and work with General Motors Electrical Systems, basic electrical, components, series, parallel and series parallel circuits, voltage, current, amperage, resistance, ohms, mhos, batteries, starters, alternators, wiper motors, wiring, small motors, semiconductors, lights, meters, scopes, wiring diagrams, SIR (Supplemental Inflatable Restraint System), radios, BCM (Body Control Module), and instrumentation. Covers heating and air conditioning systems, components, compressors, air conditioning control systems, vacuum systems, electrical systems, diagnosing, repairing, recycling, and the proper handling of R-12, 134A, and antifreeze. Prerequisite: ASEP 100.

ASEP 102 Steering, Suspension and Brakes 12 Studies and works with suspension systems used on General Motors vehicles; components, steering gears, wheel bearings, alignment angles, rear wheel tracking, adjustments and correction, wheel balance and factors contributing to vehicle handling and tire wear. Studies principles of automotive brake systems on General Motors vehicles. Practices disassembly and assembly of system components using school owned equipment. Includes proper measuring and machinery techniques of brake drums and rotors. Prerequisite: ASEP 101.

ASEP 103 Engine Repair and Performance 12 Study and work with gasoline engines used on General Motors vehicles; components, engine blocks, cylinder heads, pistons, valves, cam, crankshaft, gaskets, oil, coolant, repair, diagnosis, and some areas of machining. Studies operation, diagnosis and testing of systems used to deliver spark ignition and air/fuel to the combustion chamber of the engine and reduce vehicle emission levels. Prerequisite: ASEP 102.

ASEP 104 Manual and Automatic Drivetrain 12 Study and work with manual drive train and axles on and off the car, components, gears, bearings, clutches, CV joints, transfer cases, differentials, axle shafts, drive lines, seals, bushings, flywheel, leakage, gaskets, cables, cylinders and fluids. Work with automatic transmissions and transaxles used on General Motors vehicles, trace and power flow, diagnose problems, disassemble, inspect and evaluate, clean and layout components. Reassemble and adjust transmission and test the unit for proper operation. Work on approved customers vehicles diagnosing, servicing and repairing as needed. Provides specific diagnostic guidelines and covers procedures that take place in a dealership. Prerequisite: ASEP 103.

ASEP 280A Cooperative Education: Automotive Service Education Program 8 Work outside of the classroom at a job performing diagnostic and repair work under the supervision of a professional automotive technician.

AMERICAN SIGN LANGUAGE

ASL 101 First Year American Sign Language I 4 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 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 150 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 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 130 Deaf Studies 3 Introduces two perspectives of Deaf community, past and current perspectives on education, services, employment, legislation, signers vs interpreters, signaling devices, terminology, communication system and attitudes toward language.

ASL 150 Accelerated American Sign Language 6 For beginners. Covers the material 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 Covers the material of half of ASL 102 and ASL 103 in an accelerated format. Emphasizes active communication in ASL. Proficiency target level: Intermediate mid. 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 3 Continues work of first year ASL, reviewing, expanding, and perfecting expressive skill, structure, and vocabulary for the purpose of active communication. Emphasizes active communication in ASL. Proficiency target level: Intermediate mid. Sign Language Proficiency Interview may be required. Prerequisite: ASL 103. Prerequisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ASL 202 Second Year American Sign Language V 3 Continues work of ASL 201. Emphasizes active communication in ASL. Increased emphasis on exploring, analyzing the rules and presenting ASL stories and literature. Proficiency target level: Intermediate mid. Sign Language Proficiency Interview may be required. Prerequisite: ASL 201. Prerequisite course must have
has been completed with one year of class enrollment; proficiency interview within one term.

ATH 203 Second Year American Sign Language VI 3 Continues work of ASL 202. Emphasizes active communication in ASL. Increased emphasis on exploring, analyzing the rules, discussing, and developing and presenting ASL literature and poetry. Proficiency target level: Intermediate high. Sign Language Proficiency Interview may be required. Prerequisite: ASL 202. Pre-requisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ATH 250 Accelerated American Sign Language 4 Covers the material of ASL 201 and half of ASL 202 in an accelerated format. Emphasizes active communication in ASL. Increased emphasis on exploring, analyzing the rules, discussing, and presenting ASL literature and poetry. Proficiency target level: Intermediate mid. Sign Language Proficiency Interview may be required. Prerequisite: ASL 103 or ASL 151. Pre-requisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ATH 251 Accelerated American Sign Language 5 Covers the material of half of ASL 202 and ASL 203 in an accelerated format. Emphasizes active communication in ASL. Continues emphasis on the ASL literature, poetry and other topics. Proficiency target level: Intermediate high. Sign Language Proficiency Interview may be required. Prerequisite: ASL 202 or ASL 250. Pre-requisite course must have been completed within one year of class enrollment; proficiency interview within one term.

ATH 101 Introduction to Physical Anthropology 4 Presents physical anthropology and the study of human biological evolution in the context of modern genetics and primate behavior studies. Examines human fossil record, as well as the diversity and commonality of present and past populations of humankind. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

ATH 102 Introduction to Archaeology and Prehistory 4 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.

ATH 103 Introduction to Cultural Anthropology 4 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.

ATH 207 Cultural Anthropology: Culture Concepts 4 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.

ATH 208 Cultural Anthropology: Cultures of the World 4 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.

ATH 209 Cultural Anthropology: Cultural Growth & Change 4 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.

ATH 210 Selected Topics Ethnology: 4 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.

ATH 211 Selected Topics in Anthropology 4 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.

ATH 212 Introduction to Shamanism 4 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 will be explored. Prerequisite: WR 121 and MTH 20 or equivalent placement test scores, and ATH 103 or instructor permission.

ATH 214 Human Environments: Ecological Aspects 4 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.

ATH 230 Native Americans of Oregon 4 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.

ATH 231 Native Americans of the Northwest 4 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.

ATH 232 Native North Americans 4 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.

ATH 234 Death: Crosscultural Perspectives 4 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, China, 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.

ATH 235 Survey of Prehistoric Mexico and Central America 4 Study of the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors.

ATH 236 Independent Study: Anthropology 3 Individualized, advanced study in areas of anthropology 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 anthropology and instructor permission.

AVIATION SCIENCE

AVS 107 Flight Preparation Lab Level I 1 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 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 Rotocraft knowledge test.

AVS 111 Helicopter: Pre-Solo 1 Introduces basic and emergency helicopter maneuvers necessary for flight in the local area. Prepares the student for their first 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 127.

AVS 112 Helicopter: Private Cross-Country 1
Introduces planning and flight skills and procedures appropriate to cross-country and night flight. Students who successfully complete this course will conduct their solo 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 111, 112, 113 sequence is an alternative equivalent to AVS 115. Coreq: AVS 107. Prerequisite: AVS 111.

AVS 113 Helicopter: Private Proficiency 1 Preparation to take the FAA Helicopter Private practical test. Emphasis is on proficiency in the flight maneuvers, thorough preflight actions and exercising safe decision-making. 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. Prerequisite: AVS 112.

AVS 115 Helicopter Private Pilot Flight 3 Familiarizes student with the operation of helicopters. Fundamentals of flight, emergency procedures, air traffic control and operational procedures are explored. Prepares student for the FAA Private Pilot Rotocraft Helicopter practical test. The AVS 111, 112, 113 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. Coreq: AVS 107 and AVS 110. Prerequisite: AVS 107. Prerequisite: AVS 112.

AVS 120 Airplane: Private Pilot Ground School 4 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.

AVS 121 Airplane: Pre-Solo Flight 1 Introduces basic airplane handling, emergency procedures and local flight operations. Students who successfully complete this course will conduct their first solo local 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 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 solo 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 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 121.

AVS 125 Airplane: Private Pilot Flight 3 Familiarizes student with operation of single engine aircraft. Fundamentals of flight, air traffic control and operational procedures are explored. Prepares 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 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 general public.

AVS 130 Instrument Ground School 4 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.

AVS 131 Airplane: Instrument Attitude/Navigation 1 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 equivalent alternative to AVS 135. Coreq: AVS 107 and AVS 130. Prerequisite: AVS 123 or AVS 125.

AVS 132 Airplane: Instrument Approaches 1 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 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 Receives 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 Introduces aerodynamics. Explores various concepts and theories relevant to modern aviation. Open to the general public. Prerequisite: (no math prerequisite.)

AVS 140 Airplane: Commercial Pilot Ground 4 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.

AVS 141 Airplane: Commercial XC/Night Intro 1 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 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 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 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 equivalent alternative to this course. Prerequisites: AVS 135 or AVS 133. Coreq: AVS 107 and AVS 140.

AVS 150 Helicopter: Commercial Ground 3 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.

**AVS 151 Helicopter: Commercial XC 1** 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 Basics** 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 151.

**AVS 153 Helicopter: Commercial Basic Practice** 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** 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 157 Aircraft Systems & Structures I: Airframe 3** 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.

**AVS 158 Aircraft Systems: Powerplant 3** 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.

**AVS 205 Helicopter: Commercial Flight A 3** 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 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 207 Flight Preparation Lab Level II 1** 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** 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** 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 I 1** 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** 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 alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 223.

**AVS 222 Airplane: Commercial Proficiency 1** 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 222.

**AVS 224 Airplane: Multi-Engine 1** Introduces and develops proficiency in flying multi-engine airplanes 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** 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** Designed to prepare students for a career in aviation. Explores airline employment opportunities. Includes interview and resume preparation. Intended for second year AVS students.

**AVS 230 Airplane: Flight Instructor Ground 4** Includes flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight In-
Course Descriptions

structor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 140.

AVS 231 Airplane: CFI Intro 1 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 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 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 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.


BA 98 Business Administration: Skills and Issues 4 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.

BA 101 Introduction to Business 6 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.

BA 111 Introduction to Accounting 3 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.

BA 113 Business Credit Principles 3 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.

BA 131 Computers in Business 4 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.

BA 141 Introduction to International Business Law 3 Surveys international aspects of traditional business law subjects (sales, commercial paper, corporate law, agency, etc.) and related subjects (arbitract
law, administrative law, trade regulation, etc.). Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

**BA 177 Payroll Accounting 3** 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.

**BA 203 Introduction to International Business 3** 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 MTH 20 or equivalent placement test scores.

**BA 205 Solving Communication Problems with Technology 4** Focuses on using current technology to enhance the writing process. Topics include 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.

**BA 206 Management Fundamentals 3** Introduces business management theory, including the basic concepts of 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.

**BA 207 Introduction to E-Commerce 4** Presents concepts and skills for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, 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.

**BA 208 Introduction to Nonprofits & Philanthropy 4** Surveys the role of the nonprofit and voluntary organizations in American society including the history, theory and challenges of the third sector. Includes a 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.

**BA 210 Advanced Accounting Spreadsheet Application 3** 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 scores.

**BA 211 Principles of Accounting I 3** 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.

**BA 212 Principles of Accounting II 3** 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.

**BA 213 Principles of Accounting III 3** Study Managerial Accounting. Covers cost/volume relationships, manufacturing costs, cost decisions, management planning, budgeting, and responsibility accounting. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores; and BA 211.

**BA 215 Basic Cost Accounting 3** 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.

**BA 218 Personal Finance 3** 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.

**BA 221 Financial Management 3** 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.

**BA 223 Principles of Marketing 3** Provides a general overview of marketing including market research and consumer and industrial products. Marketing strategies, customer behavior, and international marketing are topics addressed. Recommended: BA 101, Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

**BA 224 Human Resource Management 3** 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.

**BA 226 Business Law 4** 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.

**BA 227 Business Law II 3** 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.

**BA 228 Computer Accounting Applications 3** 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.

**BA 234 International Marketing 3** 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.

**BA 237 Fundamentals of Import/Export 3** 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.

**BA 238 Sales 3** 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.

**BA 239 Advertising 3** Covers the basics of planning, creating, using, and placing advertising in the business world. Reviews entire field of advertising as basis for students who select advertising as a career or as an integral part of a marketing program. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

**BA 240 Nonprofit Financial Management and Accounting 4** 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.

**BA 242 Introduction to Investments 3** 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.

**BA 244 Introduction to Records Management 3** Offers a study of the life cycle of records on all types of media from creation through disposition. Con-
siders 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, and MTH 20 or equivalent placement test scores.

BA 249 Principles of Retailing and E-tailing 3 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.

BA 250 Small Business Management 3 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

BA 251 Office Management 3 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.

BA 255 Project Management - Business Environments 4 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.

BA 256 Income Tax 3 Introduces preparation of federal individual and sole proprietorship income tax returns. Provides brief overview of partnership and corporate returns.

BA 270 Global Business Management 3 This course explores the contemporary issues and the unique challenges businesses face when moving into the international 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.

BA 280A Cooperative Education: Business Experience 3 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/concurrent: BA 280B.

BA 280B Cooperative Education: Business Experience - Seminar 1 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 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.

BA 9235 Financial Statement Analysis I 3 Presents techniques used in financial statement analysis from credit manager’s perspective. Includes common-size, ratio analysis, and cash flow analysis. Recommended: BA 113.

BA 9703 Income Tax Preparation: Basic 8 Elements of taxation. Meets the statutory educational requirements for those wishing to be licensed income tax preparers in Oregon.

BA 9706 Income Tax Preparation: Advanced 3 Provides comprehensive overview of federal individual income tax law for return preparers and consultants. Includes update of changes in current law. Qualifies for CPE credit.

BUILDING CONSTRUCTION TECHNOLOGY

BCT 100 Overview to the Construction Industry 3 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.

BCT 101 Principles of Construction Surveying 3 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.

BCT 102 Residential Printreading 3 Provides a collaborative leaning 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.

BCT 103 Residential Materials and Methods 3 Introduces function and performance characteristics of basic building materials, components, methods, and sequences in the construction process. Emphasizes residential construction.

BCT 104 Construction Math 3 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.

BCT 105 Vectorworks for Constructors 3 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.

BCT 106 Hand Tool/Power Tool Use and Safety 3 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.

BCT 108 Introduction to Building Science - Energy Efficient Housing 3 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.

BCT 115 Introduction to Residential Greenroofing 1 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.

BCT 116 Alternative Building Design 3 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.

BCT 120 Floor Framing 3 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, joint and beam lay-out, quantity take offs, estimating and related codes. Prerequisites: BCT 106 or instructor permission.

BCT 121 Wall Framing 3 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. Prereq-
Course Descriptions

BCT 122 Roof Framing I 3 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.

BCT 123 Roof Framing II 3 Layout, cutting and assembly of hip, intersecting and unequal pitch roofs, and dormers. Discussions include truss roof assemblies. Prerequisite or concurrent enrollment: BCT 122.

BCT 127 Residential Concrete 6 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.

BCT 128 Exterior Finish 6 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.

BCT 129 Mechanical Planning for Kitchens and Baths 4 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.

BCT 130 Construction Safety 3 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.

BCT 132 Computer Applications for Construction 3 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.

BCT 133 Commercial Materials and Methods 3 Materials and Methods used in commercial construction. Techniques and methods including building systems and assemblies.

BCT 134 Construction Scheduling 3 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.

BCT 150 Mechanical, Electrical and Plumbing 3 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.

BCT 202 Business Principles for Construction 3 To learn fundamental business principles and practices used in managing a construction company. Establish objectives in marketing, operations and finance, and understand the relationship between those business activities. Study planning and management methods for achieving objectives. Learn the general legal requirements, accounting and record keeping practices.

BCT 203 Interior Finish 6 Covers codes, materials, installation, and estimating methods in residential drywall. Includes drywall, tape, finish, texture and patching. Finish carpentry covers materials types, take-offs and estimation of interior trim. Includes the miter cuts and installation of base molding, casing, crown molding, wainscot panel molding, door installation and various other interior trim treatments. A student may not receive credit for both BCT 203 and BCT 224 or BCT 226. Prerequisite: BCT 106 or instructor approval.

BCT 204B Construction Estimating - Residential 3 Introductory class in construction estimating concentrating on basic residential estimating techniques. Using plans for a small house, students will learn how to organize and prepare estimates, quantity take-off and pricing, and fundamentals of bid assembly. Prerequisite: BCT 102 and BCT 104; or instructor permission.

BCT 204C Construction Estimating - Commercial 3 Introductory class in construction estimating concentrating on basic commercial estimating techniques. Using plans for a light commercial building, students will learn: how to organize and prepare estimates, quantity take-off and pricing, and the fundamentals of bid assembly. Prerequisites: BCT 102 and BCT 104; or instructor permission.

BCT 206 Sustainable Construction Practices 3 Introduces the environmental, economical, and human consequences resulting from conventional building practices and the need for sustainable design and construction.

BCT 207 Construction Job Costing 3 Traces the construction dollar flow from time sheet to balance sheet. Emphasizing microcomputer methods, students are introduced to construction related financial documents: including “schedule of values”, labor and operations cost reports, and construction budgets. Concepts such as unit analysis, job costing, and development of historic costs, life cycle costing and change order analysis are explored.

BCT 211 Remodeling 6 Because of the variety of projects and number of specialty trades engaged in remodeling, this course will focus on business principles and construction strategies most commonly encountered by the remodeler. This course covers the business principles associated with running a successful remodeling company; the steps necessary in acquiring a building permit; communicating effectively with sub contractors and clients; hands-on remodeling projects involving framing, concrete, interior and exterior finish, and basic electrical, plumbing and mechanical ventilation. Prerequisites: BCT 102, BCT 104 and BCT 106 or instructor approval.

BCT 213 Commercial Printreading 3 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.

BCT 214 Advanced Construction Estimating 3 Advanced estimating for larger scale projects. Discussion of labor rates, specifications, budget estimating, assemble of bids bidding procedures, including use of computer estimating software. Prerequisite: BCT 204C or instructor permission.

BCT 216 Cabinetmaking I 2 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.

BCT 217 Cabinetmaking II 2 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.

BCT 218 Woodworking Projects 2 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.

BCT 219 Cabinetmaking I 6 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 cabinetworking hand and power tools. Students will draw shop drawings and estimate materials for cabinetworking jobs. Learners will develop cabinetworking skills by constructing instructor designed cabinet projects.

BCT 220 Cabinetmaking II 6 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.

BCT 221 Construction Law for the Contractor 3 Introduces basic principles of construction law used in managing construction contracts. Gain working knowledge of construction law principles through examination of case studies.

BCT 222 Engineering for Constructors 3 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.

BCT 223 Finished Stair Construction 3 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.

BCT 225 Construction Project Management 3 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.

BCT 226 Finish Carpentry 2 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.

BCT 229 Introduction to Kitchens and Baths 2 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 safe 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.

BCT 244 Kitchen and Bath Cabinet Installation 2 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.

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.

BCT 280C Cooperative Education BCT Design/Build Remodeling On-the-job training at a department-designated worksite, giving students experience in real work conditions and helping determine career choices. Department permission required.

BIOLOGY

BI 55 Human Biology 4 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.

BI 101 Biology 4 A laboratory science course designed for non-biology majors. Introduction to the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

BI 101H Biology: Honors 4 An honors laboratory science course designed for non-biology majors. Introduction to the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. Course explores the connection between biological principles and other disciplines, including architecture, economics, social sciences, history, and engineering. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

BI 102 Biology 4 A laboratory science course designed for non-biology majors. The second term of a three-term sequence. Presents protein synthesis, cell division, genetics, reproduction and development. Evolution. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101 or BI 101B.

BI 103 Biology 4 A laboratory science course designed for non-biology majors. Presents the evolutionary relationship among the kingdoms. Includes a comparison of biological systems across kingdoms. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and (BI 101 or BI 101B) and BI 102.

BI 112 Cell Biology for Health Occupations 5 A laboratory science course designed as a prerequisite course for students who plan to take microbiology and/or anatomy and physiology. Topics will include study of the scientific method, cellular chemistry, cell structure and function, principles of inheritance, and laboratory skills. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

BI 121 Introduction to Human Anatomy & Physiology I 4 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.

BI 122 Introduction to Human Anatomy & Physiology II 4 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.

BI 141 Habitats: Life of the Forest 4 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.

BI 142 Habitats: Marine Biology 4 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.

BI 143 Habitats: Fresh Water Biology 4 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. Explores 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.

BI 145 Introduction to Wildlife Conservation and Management 4 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.

BI 160 Ecology/Field Biology: Coast 2 Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Oregon Coast.

BI 161 Ecology/Field Biology: Malheur 2 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.

BI 163 Organic Gardening 4 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 growing flowers, vegetables and fruits in the Pacific Northwest. Includes organic pest control, beneficial insects and pruning and grafting. The laboratory will elucidate these concepts. An interest in plants and a basic high school biology course are recommended.

BI 164 Bird ID and Ecology 4 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.

BI 198 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.

BI 200A Principles of Ecology: Field Biology 2 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.
BI 200B Principles of Ecology: Field Biology 4 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: BI 211 and its prerequisite requirements.

BI 200C Principles of Ecology: Field Biology 6 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.

BI 202 Botany: An Introduction to the Plant Kingdom 4 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.

BI 211 Principles of Biology 5 First term of a three term sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Includes introduction to science, biochemistry, metabolism, the cell, molecular biology, and reproduction. Recommended: High school biology and chemistry in the past seven years. Prerequisites: WR 115 and RD 115 or equivalent placement test scores, and MTH 60 or higher. Prerequisite/Concurrent: CH 100 or above; or instructor permission.

BI 212 Principles of Biology 5 Second part of a three-quarter sequence designed for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Topics include: inheritance, the genetic code, modern and classical genetics, evolution, diversity, and systematics. This course may include some dissection of plants and animals. Prerequisite: BI 211 and its prerequisite requirements.

BI 213 Principles of Biology 5 Third term of a three-term sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Includes plant and animal anatomy and physiology, and individual, population, community and ecosystem ecology. Prerequisite: BI 212 and its prerequisite requirements.

BI 222 Human Genetics 3 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.

BI 231 Human Anatomy & Physiology I 4 First term of a three-term sequence covering: chemistry, cells, tissues; the skin, skeletal and muscular systems and nervous tissue. Lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer work. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 112 or (BI 211 and BI 212).
BIT 110A Bioscience Technology Basics Part I 4.5 Introduces fundamental principles and practices for the bioscience laboratory and biomanufacturing environment. Principles of quality documentation, safety, and communication will be emphasized throughout, in the context of technical activities that include measurements (weight, volume temperature, pH conductivity and spectroscopy) and solution preparation. Program Admission required.

BIT 110B Bioscience Technology Basics Part II 4.5 Introduces fundamental principles and practices for the bioscience laboratory and biomanufacturing environment. Principles of quality documentation, safety, and communication will be emphasized. Technical activities focus on laboratory and manufacturing instrumentation, aseptic principles and practices and the structure, function and measurement of biological molecules. Prerequisite: BIT 110A.

BIT 125 Quality Systems in Bioscience Technology 2 Introduction to internal and external quality systems that apply to the bioscience industry, with emphasis on working in a regulated environment. 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.

BIT 165 Biotechniques: Recombinant DNA 4 This course will give students authentic hands-on experience in recombinant DNA work. Students will learn the basic principles, strategies and techniques that are the essential tools for molecular biology. These include the preparation of plasmid vector and insert DNA, transformation, plasmid purification, and analysis of constructs from restriction patterns, Southern blot hybridization and PCR. Recommended: BI 101 or 211 and CH 100, 104 or 221.

BIT 175 Biotechniques: Proteins 4 Covers theory and practice in the purification and analysis of proteins. Techniques commonly used in research labs and biotechnology settings will be covered, including protein assay, SDS-PAGE, enzyme assay, chromatography and protein purification principles and practices. Recommended BI 101 or 211 and CH 100, 104 or 221, and MTH 95.

BIT 181 Exploring Bioscience 2 Overview and exploration of bioscience technology, from research and development to manufacturing. Covers career options and pathways, and guides students in the development of skills to identify potential internships, entry-level positions and education and training opportunities that fit the student’s goals and trends in the field. Participation in field trips is essential. Prerequisite: Concurrent enrollment in BIT 110 or instructor permission.

BIT 201 Immunoochemical Methods 5 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 Laboratory-intensive course focusing on the strategies and techniques used in recombinant DNA work. Covers vector and insert options and preparation, quantization 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, BI 102, BI 112, BI 212 or BI 234, or instructor permission.

BIT 205 Bioseparations 5 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. Prerequisites: 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 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. Prerequisite: BIT 109 or BIT 110 or instructor permission.

BIT 211 Biomolecular Principles 4 Structure/function relationships of biological molecules. Principles of organic and biochemical will be related to practical problems of function, detection and separation of biological molecules. Prerequisite: (CH 106 or 223); and BIT 109.

BIT 215 Protein Purification 5 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 217 Tissue Culture II 4 Second term of a two-term laboratory-intensive course offering more advanced training and practical experience in culture of plant and animal cells. Prerequisite: BIT 207.

BIT 221 Techniques in Molecular Biology I 5 First term of a two-term laboratory-intensive course focusing on theory and practice of techniques for analysis and manipulation of nucleic acids. Emphasizes recombinant DNA techniques and strategies and analysis of recombinant DNA by restriction digest, blot hybridization and PCR. Prerequisite: BI 234 or equivalent); and BIT 109.

BIT 223 Advanced DNA Techniques 5 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 Department permission required.

Computer Applications

CAS 103 Introduction to Windows 1 Hands-on introduction to the Microsoft Windows operating system on Personal Computers. Includes file management, basic word processing, using the mouse with Windows, other Accessories, and some basic features of the Control Panel and System Tools. Recommended: Placement into RD 115 or WR 115.

CAS 104 Basic Internet Skills 1 Hands-on course with emphasis on terminology, web browsers, search techniques, and communication tools. May include independent web-based learning.

CAS 106 Introduction to X/HTML 1 Beginning hands-on course for creating simple web pages with X/HTML. Basic concepts of X/HTML tags and file transfer protocol (FTP) will be emphasized using a text editor and an FTP application. Recommended: CAS 103 or equivalent file management experience, placement into RD 115 or WR 115. Note: Students pursuing a web certificate or degree should take CAS 206 or CAS 111D instead.

CAS 109 Beginning PowerPoint 1 Hands-on introduction to the Microsoft PowerPoint program. Includes creating multimedia slideshows for presentations to be delivered on a projection system, personal computer, or automated to run independently on a kiosk. Different types of presentations are covered including informational, educational, business, personal and entertainment. Topics include animations, transitions, and designs. Recommended: Placement into RD 115 or WR 115.

CAS 110 Introduction to Web Graphics Using Fireworks 1 Basic introduction to the features of Adobe Fireworks. Introduces basic drawing and photo manipulation tools and how to create graphics for web sites. Recommended: CAS 111D or equivalent. Note: Students pursuing a web certificate or degree should take CAS 208.

CAS 111D Beginning Web Site Creation: Dreamweaver 3 Introduces basic elements of web site creation using Dreamweaver. Includes web terminology, basic X/HTML, uploading pages to a server (FTP), site management, tables, layers, styles sheets (CSS), rollovers, optimizing graphics, and accessibility. Recommended: CAS 133 or equivalent file management and word processing experience, placement into RD 115 or WR 115.

CAS 111E Beginning Web Site Creation: Expression Web 3 Introduces basic elements of web site creation using Microsoft Expression Web. Includes web terminology, basic X/HTML, uploading pages to a server (FTP), site management, tables, layout, style sheets (CSS), rollovers, optimizing graphics, and accessibility. Recommended: CAS 133 or equivalent file management and word process experience, placement into RD 115 or WR 115.

CAS 111F Beginning Web Site Creation: FrontPage 3 Introduces basic elements of web site creation using FrontPage. Includes web terminology, basic X/HTML, uploading pages to a server, site management, tables, style sheets, rollovers, optimizing graphics, and accessibility. Recommended: Basic working knowledge of Windows, word processing, browsers and file management. Placement into RD 115 or WR 115.
CAS 121 Beginning Keyboarding 3 Learn to key alphabetic portion of computer keyboard by touch. Introduces the numeric portion of the keyboard. Develop or refine basic keyboarding techniques and increase speed and accuracy. Produce basic business and academic documents using a word processor. Recommended: Placement into RD 90 or WR 90 or above. Additional lab hours may be required, consult instructor.

CAS 121A Beginning Keyboarding 1 Key alphabetic portion of computer keyboard by touch. Develop or refine basic keyboarding techniques. Recommended: Placement into RD 90 and WR 90 or above. Additional lab hours may be required, consult instructor.

CAS 122 Keyboarding for Speed and Accuracy 3 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 115 or WR 115. Additional lab hours may be required, consult instructor.

CAS 123 Production Keyboarding 3 Rapid keyboarding and accurate proofreading of business letters, memos, reports, and tables. Increased speed and accuracy of keyboarding skills. Recommended: Placement into RD 115 or WR 115; CAS 216; OS 120, keying 45 wpm by touch; or instructor permission. Prerequisite: CAS 216. Additional lab hours may be required, consult instructor.

CAS 133 Basic Computer Skills/Microsoft Office 4 Hands-on computer literacy course for beginners. Includes mouse and windows basics and file management. Use MS Word, Excel, Access, PowerPoint, email, and Internet basics. An overview of the MyPCC Portal website is also included. Course covers the Internet and Computing Core (IC3) program content. Recommended: RD 115 or WR 115. Keyboarding by touch recommended. Additional Lab hours required.

CAS 135 Keeping Your Computer Healthy 3 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.

CAS 140 Beginning Access 3 Hands-on microcomputer course covering 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. Database design issues are discussed but not emphasized. Recommended: Placement into RD 115 or WR 115.

CAS 150 Introduction to Speech Recognition 1 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.

CAS 151 Microsoft Outlook 1 Introductory course in Microsoft Outlook, a tool for sending and receiving e-mail, organizing schedules and events, and maintaining Contacts lists, to-do lists, and tasks. Emphasizes the Outlook skills necessary in business environments. Recommended: Placement into RD 115 or WR 115.

CAS 170 Beginning Excel 3 An in-depth, hands-on course that presents beginning spreadsheet concepts. Use Excel efficiently to design and create accurate professional worksheets for use in business and industry. 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 or WR 115. Additional lab hours may be required.

CAS 170A Beginning Excel 1 Hands-on opportunity covering basic concepts of using a spreadsheet program on a microcomputer. Includes moving around the spreadsheet, entering data, formatting, and printing. Stresses a working knowledge of spreadsheet vocabulary. Recommended: Placement into RD 115 or WR 115. Additional lab hours may be required, consult instructor.

CAS 171 Intermediate Excel 3 An in-depth, hands-on course that presents advanced features of Excel to design and create accurate, professional work-sheets 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.

CAS 175 Introduction to Flash 3 Creating and editing animated movies using basic features of Adobe Flash. Covers shape and motion tweening, masks, symbols and basic ActionScripting. The Flash program is broken down into smaller parts so students can learn to use this complex program. Emphasizes how to use software. Recommended: CAS 133 or equivalent file management and word processing experience, placement into RD 115 or WR 115.

CAS 180 Search Engine Optimization-SEO 3 Elevate your website to the number one position in a search by implementing the most effective and up-to-date techniques for optimizing the searchability of web pages on the Internet. Students will create a tailored Search Engine Optimization (SEO) strategy: on-page and off-page search engine optimization, META data research and analysis, traffic generation, online tools and SEO software. Covers client side SEO. Recommended: CAS 111D, CAS 111E, CAS 206 or equivalent.

CAS 206 Principles of XHTML/HTML 4 Thorough exploration of XHTML/HTML using an HTML editor. Includes web terminology, basic XHTML, uploading pages to a server (FTP), site management, link, lists, lists, tables, forms, working with web graphics, accessibility, and introduction to style sheets (CSS). Students will create a multi-page web site using these technologies. Recommended: CAS 133 or equivalent file management and word processing experience, placement into RD 115 or WR 115.

CAS 208 Beginning Photoshop for the Web 3 Introduces basic painting and drawing features in Adobe Photoshop to create and refine graphics for websites. Introduces basic painting and drawing tools, and export options for the web. Emphasizes using the Photoshop interface efficiently. Recommended: MM 120. Prerequisite: CAS 111D or CAS 206 or permission of the instructor.

CAS 211D Intermediate Dreamweaver 3 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.

CAS 213 Enhancing Web Pages with JavaScript 4 Thorough introduction to the JavaScript language. Add interactivity to web pages and perform a variety of techniques such as validating form input, manipulating browser windows and page content, security issues, and event handling such as mouse-overs and click events. No prior programming experience is required. Recommended: CAS 206 or equivalent HTML coding skills.

CAS 214 Beginning ColdFusion/CFML 4 Develop dynamic web sites that run on ColdFusion or one of its Open Source competitors. Dramatically reduce development time with CFML, a simplified tag-based coding language. Learn 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. Create dynamic E-Commerce or business web site using CFML. Recommended: CAS 213 or CIS 233S or equivalent scripting skills.

CAS 215 Cascading Style Sheets (CSS) and Dynamic HTML 4 Create complex Cascading Style Sheets (CSS) files that format web pages according to industry and accessibility standards, work in multiple browsers, and separate content from presentation. Develop web pages using XHTML, Dreamweaver, or another HTML editor that can be customized by the user. Create stunning, interactive web pages using CSS and Dynamic HTML. Recommended: CAS 206, CAS 111D or equivalent HTML coding skills.

CAS 216 Beginning Word 3 Create, edit, and print documents such as letters, memos, and manuscripts; produce multi-page documents; use headers and footers; become familiar with the program’s writing tools and basics of enhancing documents; and produce merged copy. Recommended: Placement into RD 115 or WR 115, and keyboarding 25 words per minute.

CAS 216A Beginning Word 1 Develops introductory skill in the use of a word processing program. Includes creating, editing, and printing basic documents such as letters and memos and become familiar with the program’s writing tools. Recommended: Placement into RD 115 or WR 115; keyboarding 25 words per minute. Additional lab hours may be required, consult instructor.

CAS 217 Intermediate Word 3 Review basic features and develop additional skill using Word. Enhance...
course descriptions

Documented 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.

CAS 220 Project Management - Beginning MS Project 3 Provides an in-depth introduction to MS Project, including building entry tables, generating reports, resolving resource and time conflicts, importing data, tracking budgets and creating master projects from sub-projects. Use MS Project effectively to design and create accurate Gantt charts for use in project management. Recommended: 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.

CAS 225 Introduction to PHP 4 Introduction to the popular server-side application PHP. Designed to take students from an understanding of client-side web programming such as JavaScript and introduces them to server-side concepts. Topics include an introduction to server-side programming, syntax, variables, operators, functions, form processing, and simple database retrieval queries using MySQL. Includes basic security issues and a brief introduction to object-oriented PHP in preparation for the C/S series of PHP classes. Recommended: CAS 206 and CAS 213 and CIS 122, or equivalent experience.

CAS 231 Publisher 3 Students will use desktop publishing software program to design and create effective publications that combine text graphics, illustrations, and/or photographs such as announcements, fliers, advertisements, and reports. Create, import, and manipulate text, graphics, and/or templates through program tools and features. Recommended: Placement into RD 115 or WR 115; prior knowledge and use of Windows technology and CAS 216 or instructor approval.

CAS 232 Desktop Publishing: InDesign 3 Use InDesign, a desktop publishing software, to design and create effective publications such as announcements, fliers, advertisements, and reports. Create, import, and manipulate text and/or graphics through use of software features. Recommended: Placement into RD 115 or WR 115 and prior knowledge and use of Windows technology and CAS 216.

CAS 246 Integrated Computer Projects 4 Apply previous computer and business knowledge to create individual and group projects using software found in today's workplace. Use integrated software (i.e. MS Office) to learn skills such as linking and embedding, e-mail, Internet, FAX and scanners. Recommended: 3 credits of word processing and 3 credits of spreadsheet or instructor permission. Additional lab hours may be required, consult instructor.

CAS 275 Intermediate Flash 3 Moves beyond the basic Flash interface to introduce intermediate level Flash concepts to students. Create a Flash Web site and work on more complicated animations and effects. Incorporate video and sound. Includes working with frame labels, nested movie clip symbols, some ActionScript to support Web site creation. Emphasizes how to use the software. Recommend: CAS 111D and CAS 175 or equivalent.

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.

Careers guidance and college success

CG 100A College Survival and Success 3 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.

CG 100B College Survival and Success 2 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.

CG 100C College Survival and Success 1 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.

CG 105 Scholarships: $5 for College 2 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 scholarships, 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

CG 111A Study Skills for College Learning 3 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, memory, research, memory strategies, and critical thinking. Prerequisites: Placement into WR 115 and RD 115

CG 111B Study Skills for College Learning 2 Provides information, techniques, strategies and skills helpful in becoming more efficient in note-taking, 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.

CG 111C Study Skills for College Learning 1 Introduces information and techniques in note-taking, textbook reading, and taking exams. Develop a study schedule. Prerequisites: Placement into WR 115 and RD 115

CG 112 Stopping Test Anxiety 1 Covers techniques for coping with excessive test-taking anxiety and improving overall test performance.

CG 114 Financial Survival for College Students 1 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. Prerequisite: WR 90, RD 90, and MTH 20 or equivalent placement test scores.

CG 130 Today's Careers 2 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.

CG 130H Introduction to Today's Careers: Health 2 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.

CG 140A Career and Life Planning 3 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.

CG 140B Career and Life Planning 2 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 exploring careers. Prerequisites: Placement into WR 115 and RD 115.

CG 140C Career and Life Planning 1 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.

CG 144 Introduction to Assertiveness 1 Provides basic communication skills students can use to state or declare their rights in a positive fashion to obtain desired results in career, social and personal relations.

CG 145 Stress Management 1 Identifies specific, personal stressors and develops skills that enable students to more effectively deal with stress.

CG 146 Value Clarification 1 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.

CG 147 Decision Making 1 Help students develop awareness of their personal decision-making style(s) in order to make effective life choices in personal, social, or work settings. Introduces information on effective decision-making.

CG 190 Mentorship of Latino(a) Students 3 Offers instruction in areas of leadership and mentorship for those serving as mentors to Latino(a) high school students who are enrolled in the Oregon Leadership Institute. Covers the mentoring process as well as intercultural skills and effective communication strategies. Requires instructor consent and willingness to be enrolled for fall, winter, and spring terms.

CG 191 Exploring Identity and Diversity for College Success 4 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.

CG 209 Job Finding Skills 1 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.

CG 280A CE: Career Development 5 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 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 Provides Latino high school students an opportunity to develop leadership skills, explore career and educational options after high school through interactive sessions.

CG 0690 Stopping Test Anxiety 1 Covers techniques for coping with excessive test-taking anxiety and improving overall test performance.

CG 0693 Confidence Building 1 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.

CHEMISTRY

CH 100 Fundamentals for Chemistry 4 Covers selected basic chemical principles and computational problems found in first-year, 100-level chemistry courses. For students who have no chemical background and those with minimal problem solving skills. Recommended: Algebra I and II, or equivalent. Students who have completed or are concurrently enrolled in MTH 95 should consider enrolling in CH 104. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

CH 101 Inorganic Chemistry Principles 5 Survey of inorganic chemistry with emphasis on solution chemistry. Designed for Allied Health students. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

CH 102 Organic Chemistry Principles 5 Covers basic organic and biochemistry. Designed for Allied Health students. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

CH 104 General Chemistry 5 Includes general principles of chemistry, including atomic structure, mole concept, chemical reactions, stoichiometry, and gas laws. Designed for students in a health science curriculum leading to a Baccalaureate degree or liberal arts students who need a laboratory science elective. Prerequisite: WR 115 and RD 115 or equivalent placement test scores.

CH 106 General Chemistry 5 Includes stoichiometry, gases, oxidation-reduction, acid-base concepts, equilibrium, physical and chemical properties of solutions, and nuclear chemistry. Prerequisite: CH 104 and its prerequisite requirements.

CH 108 General Chemistry 5 Includes fundamental principles of organic chemistry and biochemical processes. Prerequisite: CH 105 and its prerequisite requirements.

CH 110 ChemExcel 1 One-credit optional workshop class taken concurrently with the CH 221, 222, 223 sequence. Provides the opportunity to enhance understanding of general chemistry topics through structured collaborative, active-learning activities (often under the direction of a peer leader), correlated with current lecture topics. NOT an open study/homework session. Concurrent registration with CH 221, 222, or 223 required.

CH 211 Introduction to Biochemistry 4 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.

CH 221 General Chemistry 5 Introduction to chemistry covering measurements, classification and properties of matter, nomenclature, atomic structure and modern atomic theory, periodic table and chemical periodicity, and chemical bonding. Recommended for chemistry and other natural science majors, and pre-professional majors in engineering, medicine and dentistry. Successful completion of high school or college chemistry class with a lab component (e.g. CH 100) in the last 5 years required. Students who have not taken high school chemistry within the last 5 years are STRONGLY encouraged to take CH 100 before CH 221. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Prerequisite/concurrent: MTH 111B or MTH 111C.

CH 222 General Chemistry 5 Topics include: stoichiometry, chemical reactions and equations; thermochemistry; physical states of matter including properties of gases, liquids, solids and solutions; and, an introduction to organic chemistry. Special topics will be included as time and interest allows. Prerequisites: Successful completion of CH 221 and its prerequisite requirements.

CH 223 General Chemistry 5 Topics include: chemical kinetics and ionic equilibria; electrochemistry; nuclear chemistry; thermodynamics; and descriptive chemistry topics. Special topics will be included as time and interest allows. Prerequisites: CH 222 and its prerequisite requirements.

CH 241 Organic Chemistry 5 Includes fundamentals of organic chemistry, bonding, hydrocarbons, alky halides, alcohols, nucleophilic and radical reactions, stereochemistry and spectroscopy. Recommended for chemistry and other laboratory science majors, and pre-professional students (medical, dental, pharmacy, physical therapy, veterinary, chiropractic, etc.) Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test score, and CH 106 or CH 223 or equivalent.

CH 242 Organic Chemistry 5 Includes conjugation, aromaticity, arene chemistry, aldehydes, ketones and spectroscopy. Prerequisite: CH 241 and its prerequisite requirements.

CH 243 Organic Chemistry 5 Includes carboxylic acids, amines, carbohydrates, amino acids, proteins, lipids, nucleic acids, heterocyclic compounds, spectroscopy and selected topics. Prerequisite: CH 242 and its prerequisite requirements.

CHLA 201 Introduction to Chicano/Latino Studies I 4 Introduces Chicano/Latino history in the United States beginning with Spanish colonization and continuing with the Mexican-American War and the migration of Chicanos/Latinos. Covers the events that shaped the Chicano/Latino experience, such as the Bracero Program, the Chicano Movement, and U.S. foreign policy in Latin America.

CHLA 202 Introduction to Chicano/Latino Studies II 4 Introduces Chicano/Latino social, political, and economic status in the United States. Includes an examination of the political and economic structure, organization and U.S. society, and the status and class position of various Chicano/Latino groups. Also includes a demographic profile and overview of current social issues.

CHLA 203 Introduction to Chicano/Latino Studies III 4 Introduces the cultural heritage of Chica- no/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.

CHINESE

CHN 101 First Year Chinese 5 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. Helps the early beginning learners to acquire language proficiency as well as cultural awareness and understanding.

CHN 102 First Year Chinese 5 The second course
Course Descriptions

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. Prerequisite: CHN 101 or instructor permission.

CHN 103 First Year Chinese 5 The third 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. Prerequisite: CHN 102 or instructor permission.

CHN 260 Chinese Culture 3 Chinese culture through films and music. Increase understanding of Chinese traditional and modern culture and society through analysis of cultural, historical and social issues through mass media and products. Explore concepts such as families, social roles, freedom, social values, morality, philosophies, economics, and more. Course conducted in English. Chinese materials presented in class will be subtitled in English. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

CIS 100 TEKnology - High Tech Career Exploration 4 Explores high tech careers including education, ethics, and work environment. Assess 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 them prepare for a career in high technology. Note: Not an elective toward a CIS degree or certificate.

CIS 100A Technology-High Tech - Career Exploration I 2 Introduces high tech careers including education, ethics, and work environment. Assess individual skills, abilities and attitudes. Presents high technology disciplines through class discussions, presentation by professionals, mentoring, and hands-on activities. Explores a plan to help prepare for a career in high technology. English communication skills necessary. Note: This elective course will not count towards a CIS degree or certificate. A student cannot receive credit for both CIS 100 (A and B) and CIS 100.

CIS 100B Technology - High Tech Career Exploration II 2 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. Complete a written plan to help prepare for a career in high technology. English communication skills necessary. Recommended: CIS 100A. 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.

CIS 100 Computer Concepts I 4 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 the 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.

CIS 121 Computer Concepts II 4 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.

CIS 122 Software Design 4 Illustrates the importance of software design as part of the software development life cycle. Prepares student to take programming courses, by giving examples of well-designed software projects. Student is 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.

CIS 125D Database Application Development I 4 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.

CIS 133B Introduction to Visual Basic.NET Programming 4 Introduces design, implementation and testing of software using Visual Basic.NET. Structured design techniques emphasized throughout. Write and test a final Visual Basic.NET program that solves a business-oriented problem. Recommended: CIS 122; or instructor permission.

CIS 133J Java Programming I 4 Introduces elementary principles of software engineering, structured program design, modular programming, object oriented program design, event driven programming, problem solving and social issues of computer systems. Topics include scalar and structured data types, alternative and repetition control structures, modular programming, object oriented programming and use of event driven graphics user interfaces. Recommended: placement in WR 121 and CIS 122 or equivalent.

CIS 135D Database Application Development II (VBA) 4 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.

CIS 135T XML, Data Transformation and Objects 4 Discuss data formats, and the use of some common software tools for data conversion. XML, a standard structure for data will be presented. Web services architecture will be presented and a web service will be set up. Students will individually and collaboratively apply skills studied to a variety of data transformation projects. Unified Modeling Language (UML) will be used to design receiving structures (objects) for data that has been transferred. Recommended: CIS 122 or CIS department approval.

CIS 140D Operating System: Microcomputers 4 Provides the basic concepts of Linux and Windows operating systems. Includes basic operating system functions, file/finder management, disk partitioning and formatting, operating system and application installation, and system configuration. See www.pcc.edu/cis. Recommended: CIS 120 or instructor permission.

CIS 140M Operating Systems I: Microsoft 4 A first course in Microsoft operating systems administration including installation, operation, 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

CIS 140S Perl Script Programming 1 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.

CIS 145 Microcomputer Hardware and Troubleshooting 4 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.

CIS 178 Applied Internet Concepts 4 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.

CIS 179 Data Communication Concepts I 4 Provides basic concepts of data communications, networking and connectivity. Explores hardware, connectivity, signaling, addressing, network topologies, communication protocols, network design, management, TCP/IP protocols, security and standards with emphasis on the OSI reference model. Recommended: CIS 120 or instructor permission.

CIS 185 Computer and Ethics 3 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.
CIS 188 Introduction to Wireless Networking 4 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.


CIS 195P PHP Web Development I 4 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.

CIS 225 End User Support 4 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.

CIS 233B Intermediate Visual Basic.NET Programming 4 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.

CIS 233J Java Programming II 4 Continues the introduction of Java Programming and Web based programming. Introduces advanced graphics, advanced event handling, advanced graphical user interfaces, input/output to files, networking, multi-processing, database access and internationalization in Java. Recommended: CIS 133J or CS 161 and CIS 275; or instructor permission.

CIS 233S Internet Web Page Scripting 4 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.

CIS 243B Advanced Visual Basic.NET Programming 4 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.

CIS 234J Java Programming III 4 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.

CIS 234N C# Programming 4 Covers the C# language; Microsoft.Net framework; Windows applications, forms and controls; introduces Web Applications and ASP.NET; introduces Web Services; basic ADOD.NET; file I/O; Visual Studio IDE. Recommended: Two courses (or proficiency) in a programming language.

CIS 234S Web Application Development Using.NET 4 Provides the necessary knowledge to create real-world web applications using server-side technologies, including ASP.NET, VB.NET, and database access with ADOD.NET. Although the primary focus is on the concepts, a business web-site is developed utilizing the presented material. Recommended: CIS 233S.

CIS 240L Linux Installation and Configuration 4 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: CS 140U.

CIS 240M Managing a Windows Server Environment 4 The first of a three-term sequence designed to prepare students for an entry-level position as an administrator of a system 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.


CIS 244 Systems Analysis 4 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.

CIS 245 Project Management - Information Systems 4 Study practical approaches for managing, planning, organizing and implementing 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. Recommend: CIS 122, MSD 279, and CAS 220.

CIS 246 Structured Systems Design 4 Provides overview of the system development life cycle (SDLC), emphasizing analytical techniques to develop a project from a previously prepared requirements document through a structured design to a final implementation. Students will prepare a formal design statement and implement the project in a computer language of their choice. Recommended: Two classes in a high-level programming language, CIS 233S, CIS 244 and CIS 275 or instructor permission.

CIS 275 Data Modeling and SQL Introduction 4 Introduces the design, uses, and terminology of a database management system. Includes data modeling using Entity Relationship modeling tools and Semantic Object modeling tools, normalization rules, relational database terminology, program/query development, multi-user database issues (including the Internet) and data administration. Recommended: CIS 122. One high-level programming language course (CIS 133B, CIS 133J, CS 161) or equivalent or instructor permission.

CIS 276 Advanced SQL 4 Focuses on design, development and implementation of SQL programming for all types of relational database applications including client/server and Internet databases. Learn to write complicated interactive and embedded SQL statement and learn the implications of multi-user database applications. Recommended: CIS 275, two-term programming language sequence, or instructor permission.

CIS 277D Database Security 4 Covers all aspects of securing a database. Uses Oracle database security to explain concepts in an relational database. Topics covered include: the importance of a database policy, identification and authorization methods (including web applications), securing connection pools and proxy authorization, identity management and enterprise users, authorizations and auditing, fine-grained access control (including application contexts security, views, row-level security, virtual private database, Oracle label security and database encryption). Recommended: CIS 276. Additional lab hours may be required.

CIS 277H Health Informatics Environment Simulation 4 Develop career objectives by solving projects in a simulated Health Informatics environment. Projects may include, but will not be limited to the following topics: data mining, work flow analysis, user interface evaluation, and other database, networking and programming applications. An overview of the Health Informatics degree will be covered. Prerequisite: CIS 135T, CIS 140M and CIS 275.

CIS 277O Advanced Database Concepts in Oracle 4 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 perfor-
mance and tuning, and advanced features of Oracle supplied packages also covered. Recommended: CIS 276.

CIS 277T Web Business Intelligence Application Development 4 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 DML. Covers fundamentals of Web Business Intelligence reporting and Web User Interface development. Recommend: CIS 276 or equivalent database experience.

CIS 278 Data Communication Concepts II 4 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.

CIS 279L Linux Network Administration 4 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. Recommend: CIS 240L.

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 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.

CIS 285 Security Tools 4 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

CIS 286 Computer Forensics 4 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.

CIS 287 Web Server Administration 4 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 278 and either CIS 279M or CIS 279L.

CIS 287M Microsoft Server Security 4 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.

CIS 288M Microsoft Network Administration 4 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.

CIS 289M Microsoft Active Directory Administration 4 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 289M may be taken concurrently.

CIS 295P PHP Web Development II 4 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 195F and CIS 125D or equivalent experience; concurrent enrollment in CIS 275 or equivalent experience.

CRIMINAL JUSTICE

CJA 100 Professions in Criminal Justice 3 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.

CJA 101 Cultural Diversity in Criminal Justice 3 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 professions; including police, corrections, parole and probation, juvenile and adult casework, private security, loss prevention, investigation and 911 communications. Prerequisite: Placement into WR 121.

CJA 111 Introduction to Criminal Justice System - Police 3 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, laws and constitutional limitations on authority. Prerequisite: Placement into WR 121.

CJA 112 Introduction to Criminal Justice System - Courts 3 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.

CJA 113 Introduction to the Criminal Justice System - Corrections 3 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.

CJA 114 Introduction to Juvenile Process 3 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).

CJA 115 Introduction to Jail Operations 3 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.

CJA 210 Arrest, Search, and Seizure 3 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.

CJA 211 Civil Liability and Ethics in Criminal Justice 3 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.

CJA 212 Criminal Law 3 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.

CJA 213 Evidence 3 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.

CJA 214 Criminal Investigation 3 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.

CJA 215 Forensic Science and Criminalistics 3 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.

CJA 217 Interviewing and Interrogation 3 Presents knowledge and working skills in the art of interviewing and interrogation. Prerequisites: CJA 100, 111; WR 121.

CJA 218 Criminal Justice Perspectives of Violence & Aggression 3 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.

CJA 225 Criminal Justice and the United States Constitution 3 Provides a broad overview of United States Constitutional Law 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.

CJA 228 Organized Crime and Terrorism 3 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.

CJA 230 Police Report Writing 4 Course is designed to teach students police report writing skills. 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 243 Narcotics and Dangerous Drugs 3 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.

CJA 244 Tactical Communication in Crisis Incidents 3 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).

CJA 245 Search Warrant Preparation 3 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.

CJA 246 Fish and Wildlife Enforcement 3 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 121.

CJA 247 Introduction to Criminal Gangs 3 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 121.

CJA 260 Introduction to Correctional Institutions 3 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 121.

CJA 261 Introduction to Probation and Parole 3 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.

CJA 262 Introduction to Correctional Treatment 3 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 programs and strategies, including the responsibilities of providers and clients. Prerequisites: CJA 100 and CJA 113.

CJA 263 Introduction to Corrections Case Management 3 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.

CJA 264 Introduction to Corrections Administration 3 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.

CJA 279 Criminal Justice Seminar 4 Designed for criminal justice agencies offering special topic seminars to meet the information and training needs of local criminal justice agencies.

CJ 280A Cooperative Education: Criminal Justice 4 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).

CJ 280B Cooperative Education: Applied Criminal Justice 4 Offered to students employed by a public sector criminal justice agency to increase professional skills and knowledge. Department permission required. See CJA advisor.
COURSE DESCRIPTIONS

CMET 131 Applied Calculus I 4 Introduces differential and integral calculus, with applications to engineering problems, including kinematics, moments of inertia and deflections of beams. Specific calculator required; see advisor. Prerequisites: CMET 121, 122, 123.

CMET 132 Plane Surveying I 3 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.

CMET 133 Materials Technology I 3 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. Prerequisites: CMET 121, 123; CH 104; WR 115.

CMET 211 Environmental Quality 4 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. Prerequisites: CMET 123, CH 104, and WR 115. Prerequisite or concurrent: WR 121.

CMET 212 Thermodynamics I 4 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.

CMET 213 Fluid Mechanics 3 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.

CMET 214 Route Surveying 3 Presents techniques for preliminary, location and construction surveys related 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.

CMET 215 Manufacturing Processes I 4 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.

CMET 221 Environmental Systems 4 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.

CMET 222 Thermodynamics II 4 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. Recommended: CMET 212.

CMET 223 Project Management I 3 Administration of engineering projects. Covers owner-design professional-constructor 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.

CMET 226 Dynamics I 4 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. Recommended: CMET 110, 131.

CMET 227 Applied Electricity Fundamentals 2 Introduces fundamental principles of electricity as applied to mechanical systems. Principle topics covered: basic electrical theory, electric motors, controls, and energy consumption considerations. Recommended: CMET 112.

CMET 228 Construction Materials 3 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.

CMET 233 CET Applied Computer Aided Design 3 Presents advanced topics in civil engineering oriented computer aided design and drawing meeting industry standards. Prerequisite: CMET 113, CMET 241. Recommended: Concurrent: CMET 214.

CMET 235 Machine Design 3 Examines fundamentals of machine design, including analysis and design of mechanical components. Covers shafts, fasteners, bolted, and welded connections. Includes predicting static and fatigue failures for various loadings and materials. Prerequisite: CMET 121, 226.

CMET 236 Structural Design 3 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.

CMET 237 MET Applied Computer Aided Design 3 Examines advanced topics in mechanical/manufacturing engineering oriented computer aided design and drawing meeting industry standards. Prerequisites: CMET 113.

CMET 241 Structural Steel Drafting 3 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.

CMET 254 Civil/Mechanical Engineering Technology Seminar I 1 Topics include information on finding employment in the civil/mechanical/manufacturing industry, writing resumes, and interviewing. Prerequisite: WR 115.

CMET 280A Cooperative Education: Civil/Mechanical Engineering Technology An opportunity to develop engineering technology skills in a department-approved work setting. Department permission required.

COMPUTER SCIENCE

CS 133G Introduction to Computer Games I 4 Fundamentals of computer game development, including a survey of computer game categories and platforms, major game components, an overview of the game development process, and an introduction to game graphics. This course will design and develop some elementary two-dimensional computer games. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

CS 133U Introduction to C 4 Solve real-world problems using structured programming principles and the C programming language in a MS DOS/Windows environment. Introduces with little or no previous programming experience the world of computer programming through development of C programs to solve practical problems. Recommended: Computer Literacy (such as completion of CIS 120).

CS 140U Introduction to UNIX 4 Provides an in-depth introduction into the UNIX operating system, including: task scheduling and management, memory management, input/output processing, internal and external commands, shell configuration, and shell customizations. Explores the use of operating system utilities such as test editors, text formatters, electronic mail, and file management, scripting, and C/C++ compilers. Discusses trends in UNIX, including use of graphical user interfaces. Recommended: Computer literacy (such as completion of CIS 120); MTH 95; placement at WR 121. Additional lab hours may be required.

CS 160 Exploring Computer Science 4 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.

CS 161 Computer Science I 4 Introduces control structures, functions, arrays, and pointers. Concepts of data representation and algorithm design; sorting and searching; lab exercises. Recommended: MTH 111; WR 121; CS 160. Completion of (CS 160 or CIS 122). (For CIS students: please contact instructor if you need a prerequisite waiver.)

CS 162 Computer Science II 4 Programming using a high level programming language. Topics include: Conditionals, I/O, Files, Functions, Classes, Pointers, Dynamic Memory, Linear Linked lists, and Multi-Dimensional Arrays. Program correctness, verification, and testing. Recommended: MTH 112; WR 121; CS 140U;
CS 201 Computer Systems 4 Introduces computer systems from a software perspective. Provides an overview of assembly language and software engineering. Students learn the fundamentals of software engineering and programming using assembly language and C. Recommended: MTH 112, WR 121, or CS 140U.

CS 233U Advanced C Programming 4 Advanced C programming including the preprocessor, advanced pointers, data structures, algorithms, and program structure. Lab exercises. Recommended: CS 133U, MTH 112, or CS 140U. Additional lab hours may be required.

CS 250 Discrete Structures I 4 Introduces discrete structures and techniques for computing sets, graphs and trees. Construct simple functions, and recursive definitions. Other topics include relational properties, equivalence, partial order, proof techniques, inductive proof, counting techniques and discrete probability. Student will not get credit for both (CS 250 and CS 251) and (MTH 231 and MTH 232). Recommended: MTH 111B or MTH 111C.

CS 251 Discrete Structures II 4 Introduces formal logic including propositional calculus and first-order predicate calculus. Presents techniques of formal reasoning including natural deduction and resolution with application to program correctness and automatic reasoning. Introduction to algebraic structures in computing. Recommended: CS 250.

CS 260 Data Structures 4 Data structures including stacks, queues, lists, vectors, graphs, and trees. Algorithms including hash tables, sorting, searching and iterating over structures. Includes an in depth examination of recursion. Lab exercises. Recommended: CS 162 or CS 234U. Additional lab hours may be required.


D 120 Pilates for Dancers 1 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. Benetfits include core strength and stabilization, muscle tone, flexibility, improved posture and body/mind awareness. Recommend: Pilates II or instructor permission.

D 150 Jazz Dance I 1 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).

D 151 Jazz Dance II 1 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.

D 169 Musical Theater Dance 2 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.

D 170 World Dance 2 Introduces 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.

D 175A Tap Dance I 1 Introduces fundamentals of tap dance technique and development. Includes development of rhythm, musicality, and dance. Emphasizes classic 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).

D 175B Tap Dance II 1 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.

D 177 Hip Hop 1 Introduces the fundamental principles and skills of Hip Hop dance. Emphasis placed on development of correct technique, strength and flexibility, musicality, and individual expression through movement. Focus on Hip Hop elements, culture, and terminology.

D 184 Ballroom Dance 1 Introduces the fundamental principles of Ballroom Dance. Emphasis placed on proper partnering, style, and phrasing. Focus on elementary steps of Foxtrot, Waltz, Swing, Cha-Cha, and Rumba.

D 192A Ballet I 1 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. Course may be taken 3 times for credit (D 192A or PE 186A separately or in combination).

D 192B Ballet II 1 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.

D 192C Modern Dance I 1 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 186U separately or in combination).

D 192D Modern Dance II 1 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.

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.

D 233U Advanced C Programming 4 Advanced C programming including the preprocessor, advanced pointers, data structures, algorithms, and program structure. Lab exercises. Recommended: CS 133U, MTH 112, or CS 140U. Additional lab hours may be required.

D 251 Dance Appreciation 4 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.

D 252 Jazz Dance III 1 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 286H separately or in combination). Recommended courses: D 151, or PE 186G, or equivalent.

D 270 Introduction to Choreography 2 Introduces to 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.

D 292 Ballet III 1 Continues 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 286F separately or in combination). Recommended courses: D 151, or PE 186G, or equivalent.

D 292D Modern Dance III 1 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 186U or instructor permission.
Course Descriptions

DA 110 Clinical Procedures I 3 Introduction to clinical dental assisting including operatoric preparation, sterilization/disinfection procedures, dental equipment, tray set-ups and restorative dental procedures.

DA 111 Clinical Procedures I (Lab) 2 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 Intermediate clinical dental assisting with instruction in oral examination, charting and other procedures. PREREQ: DA 110.

DA 113 Clinical Procedures II (Lab) 3 Continued clinic 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 Advanced clinical dental assisting with instruction in dental specialty procedures.

DA 115 Clinical Procedures Lab III 5 Advanced clinical experience, including dental specialty procedures. Students spend three days per week in dental office internships.

DA 116 Expanded Duties I 1 Study of the functions 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 117 Expanded Duties II 1 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 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 Practices radiographic techniques on manikins and correlate activities to the DA 120 lecture.

DA 122 Dental Radiology II 1 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 Continued experience with radiographic techniques on manikins and clinic patients under direct supervision.

DA 125 Dental Radiology III (Lab) 2 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 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 Lab activities prepare students in the proper handling and manipulation of the materials studied in DA 130 lecture.

DA 132 Dental Materials II 1 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 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 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 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 Specialized study of the structures of the head and neck with emphasis on the oral cavity.

DA 150 Dental Office Procedures I 2 Overview of procedures associated with reception desk responsibilities and dental office management.

DA 152 Dental Office Procedures II 2 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 I 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 I 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 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 corequisite to RD 80.

DE 31 Learning Skills I 1 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).

DE 50 Vocabulary Building 1 Topics include determining word meaning, parts of speech, pronunciation, spelling, and writing with new vocabulary. Recommended 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.

DE 51 Building Academic Vocab in Content Areas: Science/Literature 2 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.

DH 100 Special Dental Hygiene Practice Clinic experience for dental hygiene students or graduates needing to maintain or enhance clinical skills outside the regularly scheduled clinic sequence, especially in preparation for Board examinations. Instructor permission required.

DH 101 Dental Hygiene Theory I 4 Studies basic dental hygiene, theory and philosophy as applied to direct patient services.

DH 102 Dental Hygiene Theory II 2 Continues on the study of dental hygiene theory and practices, including oral prophylaxis classifications, current non-surgical periodontal therapy, alternative oral physiotherapy aids, dental hygiene process of care and school clinic policies and procedures. Co-requisite: DH 105.

DH 103 Dental Hygiene Theory III 2 Expansion of the concepts of dental hygiene theory to include the more difficult oral conditions and special needs.

DH 104 Dental Hygiene Practice I 3 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 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 Continued clinical activities with increased difficulty in the type and number of cases.

DH 109 Dental Radiology I 2 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 DH 110 Cariology 2 Studies the biological basis for the treatment of dental caries as an infectious disease process. Preventive measures and treatment modality will be discussed.

DH 113 Dental Anatomy 2 Studies anatomical characteristics of all permanent and deciduous teeth and their surrounding tissues.

DH 113L Dental Anatomy (Lab) 1 DH 121 Oral Health Education and Promotion 1 Familiarizes the student with selected teaching techniques having direct application to oral health education concepts.

DH 127 Medical Emergencies 2 Study of emergency problems that occur in the dental office including
DH 128 Oral Histology 1 Studies microscopic anatomy of the oral tissues. Course serves as an introduction to DH 129 Oral Pathology.

DH 129 Oral Pathology 3 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 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 Dental hygiene theory applied to patients having periodontal disease; instruction includes comprehensive patient management. Co-requisites: DH 204

DH 202 Dental Hygiene Theory V 3 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 3 Expansion of dental hygiene theory to include dental specialties and the role of the hygienist in specialty offices. Job search skills and stress management included.

DH 204 Dental Hygiene Practice IV 5 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 205 Dental Hygiene Practice V 5 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 Advanced dental hygiene clinic 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 208 Community Oral Health I 2 Introduction to national and local public health issues and initiatives for delivering care to varied populations.

DH 210 Dental Radiology Lab II 1 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 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 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 Classification, chemistry, physical properties, and uses of dental materials including manipulation techniques.


DH 236 Ethics & Jurisprudence 1 Studies legal restrictions and ethical responsibilities associated with the practice of dental hygiene and dentistry.

DH 246 Pharmacology 3 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 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 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 Development, implementation and evaluation of dental health projects in the community.

DH 260 Periodontology I 2 Introduction to the science and management of periodontal diseases. Emphasizes the role of gingivitis in the etiology of periodontal disease.

DH 260 Periodontology II 2 Introduction to the science and management of periodontal diseases. Emphasizes the role of gingivitis in the etiology of periodontal disease.

DRAFTING TECHNOLOGY AND DESIGN

DRF 100 Drafting Orientation 3 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.

DRF 117 Drafting Fundamentals 4 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.

DRF 126 Introduction to AutoCAD 3 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.

DRF 133 Intermediate Drafting 4 Reviews and incorporates material presented in DRF 117 and DRF 118. Introduces threads, fasteners, keys and springs, and their applications. Prerequisites: DRF 117, 126.

DRF 135 Advanced Drafting 4 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.

DRF 136 Intermediate AutoCAD 3 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.

DRF 185 AutoCAD Inventor - Fundamentals 3 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. Prerequisite: DRF 136.

DRF 237 Pro/Engineer Basics 3 Provides information on the Pro/Engineer Interface, command structure and solid modeling. Develops knowledge and skills in the creation and detailing of solid models.

DRF 246 AutoCAD 3-D and Solid Modeling 3 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.

DRF 251 Kinematics Drafting 3 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 (shelf) items and custom designs. Prerequisite: DRF 135, DRF 136.

DRF 256 Advanced AutoCAD 3 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.

DRF 270 SolidWorks Fundamentals 3 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.

DRF 271 SolidWorks Advanced 3 Covers advanced modeling options, configurations of assemblies, sheet metal, and top-down assembly modeling. Prerequisite: DRF 270.

DRF 280 Cooperative Education: Drafting Student works on approved job sites and receives as varied and complete an experience as possible under job conditions. Prerequisite: Department approval required prior to registration.

DRF 285 AutoCAD Inventor - Advanced 3 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.

DIESEL SERVICE TECHNOLOGY
Course Descriptions

DS 101 Engine Rebuild and Lab Procedures 12 Covers engine theory, engine components, and proper diesel engine rebuild procedures. Introduces basic engine electrical and fuel systems, shop tool use and maintenance.

DS 102 Truck Power Train 6 Introduces gear transmissions, differentials and clutches involved in the application of diesel-powered vehicles.

DS 103 Fuel Injection Systems 6 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.


DS 105 Fundamentals of Hydraulics & Air Conditioning Systems 6 Fundamentals of hydraulics in theory and shop practice provides a solid background in applications of hydraulics in the trucking and heavy equipment industry. Heavy duty air conditioning operation, trouble shooting and system repair is incorporated into this class.

DS 106 PMI/Detroit Diesel Electronic Control 3 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.

DS 107 Live Equipment and Lab 6 Repair of customer-owned (live) equipment under a minimum of supervision. Department approval required.

DS 202 Heavy Duty Power Train 6 Advanced theory and application on automatic and power shift transmissions as used in the heavy equipment industry.

DS 203 Fuel Injection System Diagnostics & Cat Elect Eng Controls 6 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.

DS 204 Diesel Starting, Charging & Electronic Control Systems 6 Overall system components and practice live troubleshooting of heavy duty electrical and electronic systems. Prerequisite: DS 104.

DS 205 Mobile and Hydrostatic Hydraulics 6 Covers advanced hydraulics and hydrostatics used on heavy equipment, farm machinery, marine equipment, hydraulic cranes, backhoes and other equipment. Emphasizes troubleshooting. Prerequisite: DS 105.

DS 206 Medium/Heavy Duty Truck Brake, Suspension & Steering 9 Gain knowledge in medium/heavy duty truck brake systems, suspension and steering. Covers: air brake systems, hydraulic brake systems, truck foundation brakes, airlock brakes, automatic slack adjusters, wheels, tires and fifth wheels. Emphasizes safety and the use of service manuals and textbooks.

DS 280A Cooperative Education: Diesel Service Technology 6 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.

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.

DS 9112 Small Marine Diesel Engine Preventive Maint and Tune-up 2 Analyze and diagnose each supporting system of the small diesel engine to properly tune the engine for maximum performance.

DEALER SERVICE TECHNOLOGY

DST 110 Caterpillar Engine Fundamentals 8 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.

DST 111 Introduction to Caterpillar Service Industry 3 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.

DST 112 Caterpillar Hydraulic Fundamentals 4 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.

DST 113 Caterpillar Engine Fuel Systems 4 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), Nippondenso, and Zexel fuel systems. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 110 and DST 111.

DST 114 Fundamentals of Electrical Systems 4 This course introduces the student to basic electrical and electronic fundamentals needed by a technician to properly diagnose and repair the complex electrical installed in Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 110 and DST 111.

DST 115 Air Conditioning 3 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 110 and DST 114.

DST 116 Fundamentals of Transmissions and Torque Converters 4 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 110 and DST 114.

DST 117 Caterpillar Machine Hydraulic Systems 4 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 110 and DST 114.

DST 150 Caterpillar Service Technology Internship 6 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. Students must have completed the sequence courses with a minimum C grade, prior to internship. See advisor for proper courses.

DST 200 Undercarriage and Final Drive 4 This course will discuss methods for tranferring 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. DST 110.

DST 201 Machine Electronic Systems 4 This course introduces the student to Caterpillar machine electronic systems and diagnostic testing needed for 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 117.
DST 202 Caterpillar Engine Performance 3
This course is an in-depth study of engine diagnostics and repair techniques. Much of the class time is spent with on-iron activities, diagnosing and correcting engine problems. Participants learn basic diagnosis and troubleshooting procedures, use of Caterpillar diagnostic tools, an use of Caterpillar reference material. The four major engine systems studied are oil, air, cooling, and fuel. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 110 and DST 113.

DST 203 Caterpillar Machine Diagnostic 3
This course introduces the student to machine problem identification using diagnostic tooling and reference material to properly diagnose and repair the complex systems installed on Caterpillar machines. The course will concentrate on repair logic and applications, using a troubleshooting and diagnosis process, to solve machine faults in the power train, hydraulic system, and electrical system. The remainder of the course will focus on solving actual machine malfunctions, utilizing all diagnostic principles, tooling, and electronic troubleshooting applications. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 201 and DST 117.

DST 204 Machine Specific Systems 6
This course introduces the student to Caterpillar machine specific systems. The materials presented in this course are intended to give the student a general knowledge of Caterpillar machine specific systems used in today's products. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 201 and DST 117.

DENTAL LABORATORY TECHNOLOGY

DT 101 Dental Technology Lab I 6 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.

DT 102 Dental Technology Lab II 6 Continued skill development in complete denture construction. Articulators and immediate overdentures introduced.

DT 103 Dental Technology Lab III 6 Advanced complete denture construction to include alternative materials, occlusal patterns and denture individualization.

DT 120 Dental Anatomy 2 Studies basic forms, structures and functions of teeth and their surrounding tissues.

DT 141 Denture Techniques I 2 History and philosophy of complete removable dentures with an introduction to the construction process. Artifical tooth selection and setting procedures emphasized.

DT 142 Denture Techniques II 2 Continued study of denture construction including the use of articulators, finishing procedures and alternative techniques.

DT 143 Denture Techniques III 2 Advanced study of denture construction including alternative occlusal patterns and materials.

DT 151 Science of Dental Materials I 2 Overview of materials used in dentistry such as gypsum products, waxes and impression materials.

DT 152 Science of Dental Materials II 3 Introduces chemistry and physics, especially as they relate to dental materials. Measurement techniques and unit conversions are stressed.

DT 204 Dental Technology Lab IV 6 Skill development in the processes and procedures associated with dental crown and bridge construction. Dental inlays included.

DT 205 Dental Technology Lab V 6 The uses of porcelain and acrylic in crown and bridge construction with emphasis on color and form reproduction.

DT 206 Dental Technology Lab VI 6 Fabrication of removable partial dentures with emphasis on framework design. Orthodontic appliances included.

DT 253 Science of Dental Materials III 2 Continued study of dental materials as related to cast metal alloys and crown and bridge construction.

DT 254 Science of Dental Materials IV 2 Advanced study of dental materials including ceramics (porcelain) and high fusing metal alloys.

DT 270 Inlay Casting, Crown and Bridge 3 Introduces crown and bridge construction processes and techniques including preparation and waxing of dies, investing, casting, and finishing. Principles also applied to dental inlays.

DT 271 Partials, Clasp and Bar 2 Study of the philosophy, materials, design and fabrication processes of removable partial dentures.

DT 272 Dental Ceramics 3 Study of dental ceramics (porcelain) including the philosophy, structure, properties, uses, and laboratory procedures associated with this material.

DT 275 Dental Laboratory Management 2 Introduces management skills and responsibilities as well as the problems associated with dental laboratory ownership.

DT 276 Dental Laboratory Management Lab 1 Computer-based exercises in techniques required for small business management.

DT 284 Dental Specialties 2 Introduces dental specialties and advanced techniques that involve participation and skill of the dental lab technician.

DT 285 Dental Seminar and Practicum 2 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.

DT 9046 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.

ECONOMICS

EC 200 Introduction to Economics 4 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. Recommend: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

EC 201 Principles of Economics: Microeconomics 4 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.

EC 203 Principles of Economics: Applications to Economic Issues 4 An economics course that covers specific topics in some depth. Topics covered change with 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.

EC 216 Labor Markets: Economics of Gender, Race, and Work 4 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.

EC 230 Contemporary World Economic Issues: International Economics 3 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 restructuring of the Russian and Eastern European economies, economic development and problems of developing nations.

EC 285 Introduction to Political Economy 4 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 sys-
ECE 120 Introduction to Early Education and Family Studies 3 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.

ECE 121 Observation and Guidance I 3 Focuses on age-appropriate guidance and observation techniques for individual children six weeks 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.

ECE 122 Environments and Curriculum in Early Care and Ed I 4 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.

ECE 123 Environments and Curriculum in Early Care and Ed II 4 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.

ECE 124 Multicultural Practices: Exploring Our Views 3 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.

ECE 130 Practicum Seminar 2 Reviews lab experiences and observations. Focuses on the role of the teacher in carrying out a developmental philosophy of early childhood education.

ECE 131 Practicum I-Experienced Teachers (Infant/Toddler and Preschool) 3 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

ECE 133 Practicum I 3 Develops skills in working with infants/toddlers 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, and planning a schedule and curriculum. Prerequisites: ECE 120 and ECE 121.

ECE 134 Practicum II 3 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.

ECE 170 Coaching and Mentoring in Early Education and Family Studies 1 This course explores the role of coaching and mentoring in facilitating the development of novice early education practitioners and in enhancing early childhood environments. Models of coaching and mentoring will be reviewed and issues discussed.

ECE 173 Children and Loss: The Effects of Death and Divorce 1 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.

ECE 174 Head Start Past and Present 1 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.

ECE 175A Infant/Toddler Caregiving: Learning and Development 1 Covers growth and development: physical, cognitive, and language; ages of infancy and facilitating learning.

ECE 175B Infant/Toddler Caregiving: Group Care 1 Covers group care including: routines, quality, staff relations, environments and welcoming children and families into care.

ECE 175C Infant/Toddler Caregiving: Social/Emotional Growth 1 Covers social-emotional growth and socialization including: development, temperament, responsible care, guidance and discipline, and supporting the needs of infants and toddlers.

ECE 175D Infant/Toddler Caregiving: Family/Provider Relationships 1 Covers family/provider relationships including: establishing partnerships with parents, listening and responding to families needs, supporting culturally diverse families, culturally sensitive care, conducting business and handling difficult issues.

ECE 177 Tiny to Tall: Making Mixed Age Groupings Work 1 Mixed-age early childhood settings can include children from infancy through early elementary school age. This course explores the benefits and addresses the challenges of creating quality environments and programming for children of mixed ages.

ECE 179 The Power of Portfolios in Early Education 1 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.).

ECE 180 Early Childhood Professional English A 3 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.

ECE 181 Early Childhood Professional English B 3 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.

ECE 182 Early Childhood Professional English C 3 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.

ECE 184 Children’s Puppetry & Theater 1 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.

ECE 185 Planning Fun and Meaningful Field Trips for Young Children 1 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.

ECE 186 Nature and Gardening with Young Children 1 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.
ECE 187 Cooking with Kids 1 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.

ECE 188 Block Play and Woodworking for Young Children 1 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.

ECE 189 Building Relationships with Infants, Toddlers, and Families 1 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.

ECE 191 Interest-Based Planning for Infants 1 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.

ECE 193 Advocacy in the Field of Early Education and Family Studies 1 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.

ECE 194 Surviving and Thriving: Managing Stress in Early Education 1 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.

ECE 197 Career Exploration in Early Education and Family Studies 1 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.

ECE 198 Building Effective Outdoor Environments 1 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.

ECE 200 The Professional in Early Education and Family Studies 3 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

ECE 221 Observation and Guidance II 3 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.

ECE 224 Multicultural Practice: Curriculum & Implementation 3 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.


ECE 235 Music and Movement in Early Childhood Education 3 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.

ECE 236 Language and Literacy in Early Childhood Education 3 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.

ECE 238 Administration of Early Childhood Programs 3 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.

ECE 241 Exploring the CDA 1 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.

ECE 260 Advanced Practicum - Seminar 3 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.

ECE 264 Advanced Practicum (Lab) 4 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.

ED 100 Introduction to Education for Paraeducators 3 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.

ED 102 Displays & Graphics for Educators 3 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. Prerequisites: CAS 133 or ED 136.

ED 103 Desktop Publishing for Educators 3 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.

ED 104 Multimedia for Educators 3 Develops and evaluates multimedia presentations for use in schools and libraries. Multimedia presentation guidelines will be used in planning and developing materials.

ED 109 Library Procedures 3 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.

ED 111 Selection of Library Materials 3 Provides an introduction to the selection and evaluation of library materials. Covers library standards, selection policies, verification tools, censorship and copyright laws.

ED 112 Introduction to Children's Literature 3 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.

ED 114 Reference Materials 3 Introduces refer-
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ED 290 Sheltered Instruction for English Language Learners 3 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.

ED 291 Bilingual and ESL Strategies 3 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.

ED 298A Special Projects in Education 1 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.

ED 298B Special Projects in Education 2 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.

ED 298C Special Projects in Education 3 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.

ED 298D Special Projects in Education 4 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.

ED 298E Special Projects in Education 5 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.

ED 971 Industrial Safety 1 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.

ED 221 Semiconductor Devices and Circuits 5 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.

EET 222 Operational Amplifier Circuits 5 Characteristics and applications of operational amplifiers (op-amps). 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.

EET 223 RF Communications Circuits 5 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.

EET 241 Microcomputer Systems I 4 Introduces X86 assembly language programming for the IBM PC compatible computer including the use of BIOS and DOS function calls and the use of procedures. Structured programming techniques will be used to write programs and accept keyboard input and create displayed results. Appropriate program testing and debugging methods will be emphasized. Prerequisites: EET 122 and either CS 133U or CS 161.

EET 242 Microcontroller Systems 4 Introduces the student to the 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. Prerequisite: CS 133U and EET 122.

EET 254 Electronic Engineering Technology Seminar 1 Topics include information on finding employment in the electronics industry, writing resumes, and interviewing. Prerequisite: Sophomore standing in EET.

EET 255 Industrial Control Systems 4 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.

EET 256 Capstone Project 2 Students learn how to work as teams on instructor approved projects. Students can choose projects in electronics, renewable

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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. Prerequisites: EET 241 or EET 242; and EET 222

EET 260 Biomedical Equipment I 4 Introduces 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.

EET 261 Biomedical Equipment II 4 Introduces modern imaging systems, pacemakers, defibrillators, surgical equipment, lasers, phototherapy and electrotherapy equipment, hemodialysis machines, lithotriptors, anesthesia machines, ventilators, radiotherapy equipment and automated drug delivery systems. Prerequisites: EET 260.

EET 269 Wind Power 3 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 presented. Prerequisite: WR 121. Prerequisite/Concurrent: MTH 95.

EET 271 Robotics 4 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.

EET 280A Cooperative Education: Electronics Engineering Technology For students employed in an approved cooperative education position within a local electronic 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. Prerequisites: Department approval; EET 260 Corequisite: EET 261.

ELECTRICAL TRADES

ELT 110 Electricity for Non-Electricians 2 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 will 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.

ELT 120 OSHA 10 Hour Safety Training 1 Introduces OSHA General Duty Clause 5(a)(1) General Safety and Health Provisions, Competent Person, Qualifications, Personal Protective Equipment, Electrical Hazards, 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.

ELT 125 Basic Programmable Controllers 2 Develops the student's understanding of the complete operation of a variety of programmable controllers. The applications, operations, and programming of PLCs 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: (WR 111 or TE 9237); BA 131.

ELT 126 Intermediate Programmable Controllers (PC Based) 2 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

ELT 150 Fiber Optics 14 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.

ELT 151 Fiber Optics II 4 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: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores.

ELT 210 Electricity for the Non-Electrician II 2 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.

ELT 220 OSHA 30 Hour Safety Training 3 Emphasizes safe working environments targeting people who have compliance and training responsibilities. Covers how to establish employee protection programs and to inform and train employees properly. Includes the OSHA general safety and health provision, Hazcom, health hazards in construction, stairways and ladders, motor vehicles, materials handling, hand and power tools, scaffolding, fire protection, excavations, confined space entry, fall protection, personal protective and life-saving equipment and electrical safety. Awards a 30 hour OSHA safety card upon successful completion of course. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes.

ELT 225 Advanced Programmable Controllers, PC Based 2 Covers advanced features of Programmable controllers including designing, monitoring, troubleshooting and editing techniques with practical hands-on experience. This class can be used toward Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 126 or TE 9121.

ELT 226 Basic Human Machine Interface (HMI) Program 2 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. Courses will be used to program. Prerequisites: ELT 225 or TE 9127.

ELT 230 National Electrical Code 3 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. ELT 230 and APR 230 cannot both be taken for credit.

ELT 231 National Electrical Code II 3 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.
licensing purposes. ELT 231 and APR 231 cannot both be taken for credit.

ELT 250 AMP ACT I 1 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.

ELT 251 AMP ACT II 1 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-526-14A and ANSI/TIA/EIA-526-7. 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.

ELT 252 AMP ACT III 1 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.

ELT 280 Electrical Code Changes 0.5 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.

ELT 281 NEC Ratings 0.5 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.

ELT 282 Grounding and Bonding 0.5 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.

ELT 283 Code Calculations 0.5 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.

ELT 284 Motor Controls 0.5 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.

EMERGENCY MANAGEMENT

EM 101 Introduction to Emergency Services 4 Covers roles and responsibilities of a wide range of emergency services providers and the relationship between these service providers and the community. The relationships between police, fire service, emergency medical service, and emergency communications and emergency management, will be covered, as well as, the organizational structure, terminology, history, training standards, ethical and legal responsibilities of each discipline.

EM 103 Introduction to Radio Communications 3 This course introduces students to the technology of two-way radio communications, as applied to emergency services. Telecommunicators provide the communications link between agencies, field responders and the public. Understanding the operation and components of two-way radio and proper radio broadcasting procedures is essential to the communications role of all first responders. Prerequisite: WR 115.

EM 110 Theory of Emergency Management 3 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. Recommended: WR 115.

EM 114 History of U.S. Hazards, Disasters and Emergency Management 4 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.

EM 202 Principles & Practices of Hazard Mitigation 3 The disaster mitigation goal of governing 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.

EM 203 Principles & Practices of Disaster Response I 4 Uncovers 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.

EM 204 Principles & Practices of Disaster Response II 4 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.

EM 205 Disaster Recovery Operations 3 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.

EM 210 Emergency Management Planning for Hazards & Disasters 4 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 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.

EM 211 Public Policy & Law in Emergency Management 3 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.

EM 221 Business Continuity or Resumption of Operations Planning 3 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.

EM 222 Disaster Exercise Design and Evaluation 3 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.

EM 223 Terrorism 3 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.

EMERGENCY MEDICAL SERVICES

EMS 100 Introduction to Emergency Medical Services 3 Covers the roles and responsibilities of the EMT, emergency medical services system, medical-legal considerations, major incident response, hazardous materials awareness, and stress management.

EMS 105 EMT Basic Part I 5 Designed to develop student skills in the recognition of symptoms of illness and injuries and proper procedures of emergency care. Students will also observe the EMT’s role in the hospital emergency department and ambulance during clinical ro-


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ENG 104 Introduction to Literature (Fiction) 4 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.

ENG 105 Introduction to Literature (Drama) 4 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.

ENG 106 Introduction to Literature (Poetry) 4 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.

ENG 107 World Literature 4 English 107 is the second of a two-course survey of Western Literature that includes English 106. English 107 exposes students to a broad spectrum of literature in translation that begins at the formation of a modern Western literature (14th century) and concludes at the present. English 108 usually begins at the point of Dante's Divine Comedy, Chaucer's The Canterbury Tales, and Cervantes Don Quixote, and finishes in the late modern era of Gao Xingjian's Soul Mountain. The series does not have to be taken in sequence. Prerequisite: WR 115 and RD 115 or equivalent placement test scores.

ENG 108 World Literature 4 English 108 is the second of a two-course survey of Western Literature that includes English 107. English 108 exposes students to a broad spectrum of literature in translation that begins at the formation of a modern Western literature (14th century) and concludes at the present. English 108 usually begins at the point of Dante's Divine Comedy, Chaucer's The Canterbury Tales, and Cervantes Don Quixote, and finishes in the late modern era of Gao Xingjian's Soul Mountain. The series does not have to be taken in sequence. Prerequisite: WR 115 and RD 115 or equivalent placement test scores.

ENG 195 Film Studies: Film as Art 4 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.

ENG 196 Film Studies: Directors 4 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.

ENG 197 Film Studies: Contemporary Themes and Genres 4 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.

ENG 201 Shakespeare 4 Enhances understanding and appreciation of Shakespeare's achievement and contribution to literature. Focuses on five or more plays and selected non-dramatic poetry in order to introduce the study of Shakespeare's dramatic techniques, character development, and language. The works are chosen to reflect a broad range of patterns, themes, and genres. Recommended prior coursework: ENG 105 and 106. Prerequisite: WR 115 and RD 115 or equivalent placement test scores.

ENG 202 Shakespeare 4 Enhances understanding and appreciation of Shakespeare's achievement and...
contribution to literature. Focuses on five or more plays
and selected non-dramatic poetry in order to introduce
the study of Shakespeare's dramatic techniques, charac-
ter development, and language. The works are chosen
to reflect a broad range of patterns, themes, and genres.
Recommended prior coursework: ENG 105, 106, and
201. Prerequisite: WR 115 and RD 115 or equivalent
placement test scores.

ENG 204 Survey of English Literature 4
Literature of the British Isles: Medieval and Renaissance
Prerequisites: WR 115 and RD 115 or equivalent placement
test scores.

ENG 205 Survey of English Literature 4
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.

ENG 207 World Literature - Asian (India) 4
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 place-
ment test scores.

ENG 208 World Literature - Asian (China) 4
Introduces students to Chinese literature in English (for
the most part, translated) from ancient to contemporary. This
course may include such works and authors as The
Book of Songs, The Analects, the Tao Te Ching, Li Po, Du
Fu, Journey to the West, and contemporary writers such as
Ding Ling, Wang Meng, Liu Pin-yeng, Shi Tiesheng,
Chen Ran, and Li Xiao. Prerequisite: WR 115 and RD 115
or equivalent placement test scores.

ENG 209 World Literature - Asian (Japan) 4
Introduces students to Japanese literature (translated into
English) from the earliest poems to contemporary nov-
els, films, and animation. The readings will include such
works and authors as the Man yoshu, The Tale of Genji,
The Pillow Book, and the twentieth century novelists
Kawabata, Enchi, Mishima, and Murakami. Prerequisite:
WR 115 and RD 115 or equivalent placement test scores.

ENG 212 Biography and Autobiography 4
Studies biographies, autobiographies, memoirs, and
journals as works of literature. Prerequisite: WR 115 and
RD 115 or equivalent placement test scores.

ENG 213 Latin American Literature 4
Explores fiction, poetry, drama, myths, and more from Latin Amer-
ica. Includes works of Hispanic, Indigenous, and Afro-Car-iblean origin. All readings are in English. Prerequisite:
WR 115 and RD 115 or equivalent placement test scores.

ENG 214 Literature of the Northwest 4
Studies fictional, factual, and poetic works by Northwest writers
from before the arrival of Euro-Americans to the present.
Emphasizes relationship between Northwest writing and
Northwest social, cultural, and physical environment.
Prerequisite: WR 115 and RD 115 or equivalent place-
ment test scores.

ENG 215 Literature of Genocide 4
Explores a range of writings and films on genocide and its aftermath.
Considers memoirs, fiction, poetry, literary nonfiction,
and films created by survivors and other in relation to
genocide and its varied historical contexts. Prerequisite:
WR 115 and RD 115 or equivalent placement test scores.

ENG 222 Images of Women in Literature 4
Challenges students to explore images of women in liter-
ature. Focuses on portrayal of the feminine in mythol-
yogy; conventional images in Western literature; literature
of non-Western cultures or that of other groups within
Western culture in relation to specific themes; or a com-
bination of these. Students practice literary analysis. Pre-
requisite: WR 115 and RD 115 or equivalent placement
test scores.

ENG 237 American Working Class Literature 4
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.

ENG 240 Introduction to Native American
Literatures 4
Studies oral and written composition by Native Americans from both before and after contact with Euro-Americans. Provides historical, geographical,
political, social, religious, linguistic, aesthetic and eth-
nicopolitan contexts for understanding the various tribal
literatures studied. Prerequisite: WR 115 and RD 115 or
equivalent placement test scores.

ENG 244 Introduction to Asian-American
Literature 4
Studies writings in English by American writers of Chinese,
Japanese, Korean, Vietnamese, Fili-
pino, Pacific Islander, and other Asian ancestry. Consid-
ers 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.

ENG 246 Transnational Literature 4
Examines the themes of Transnational Literature, such as migra-
tion, 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.

ENG 250 Introduction to Folklore and My-
thology 4
Explores origins, nature and content of myth and folklore. Offers student ability to recognize and ap-
preciate myths from any culture. Through selected read-
ings, students become aware of questions about life as
expressed in myth. Prerequisite: WR 115 and RD 115 or
equivalent placement test scores.

ENG 253 Survey of American Literature 4
Introduces students to the literature of the land which
are in Africa. Investigates African civilization and writers
of African descent up to the period of Reconstruction. Exp-
lores American and European slave narratives, as well
as the African origins of African- American writing and
storytelling. Prerequisite: WR 115 and RD 115 or equiva-
lent placement test scores.

ENG 257 African-American Literature 4
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 equiva-
lent placement test scores.

ENG 258 African-American Literature 4
Introduces the literature of Americans whose roots are in
Africa. Emphasizes the way contemporary political and
social aspirations of African Americans are reflected in
the literature of the periods from the Harlem Renaissance
to the present. Prerequisite: WR 115 and RD 115 or equiva-
lent placement test scores.

ENG 260 Introduction to Women Writers 4
Explores women's literary theory and writings. Students
read various sorts of fiction and non-fiction from various
places and periods. Prerequisite: WR 115 and RD 115 or equiva-
lent placement test scores.

ENG 261 Literature of Science Fiction 4
Explores the roots of science fiction as well as classic
and modern works of science fiction and speculative liter-
ature. Students will analyze 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. Pre-
requisite: WR 115 and RD 115 or equivalent placement
test scores.

ENG 265 International Political Poetry 4
Develops students' understanding of how poets address is-
sues of class oppression, economic inequality, racism,
sexism, war, and peace. Shows how poets function as
prophets, precursors, dissidents, and recorders. Prereq-
usitite: WR 115 and RD 115 or equivalent placement
test scores.

ENG 275 The Bible as Literature 4
Explores the Bible as a literary text by discussing authorship,
translation, literary forms, history, and cultural context. Dis-
cusses 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.

ENGR 100 Exploring Engineering 1
Focuses on engineering careers, and what engineers "do".
Provides an overview of engineering disciplines and associated occu-
inations through class discussions, presentations by
practicing engineers, laboratory activities, and viewing
of occupational videos. Designed to inform students of

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the attributes of a career in engineering and the academic preparation it requires.

ENGR 101 Engineering Fundamentals 4 Introduces basic engineering problem solving, analysis and design. This course covers basic concepts of curve fitting, statistics, electricity, and mechanics, including vector algebra. It utilizes spreadsheet and computer programming applications as problem solving tools. Students will be introduced to non-technical aspects of engineering, such as registration laws and ethics. Labs may include group engineering project work. Prerequisite: Placement in MTH 251. Prerequisite or concurrent: WR 115.

ENGR 102 Engineering Graphics 3 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.

ENGR 114 Engineering Programming 4 Introduces structured programming with applications to engineering problems. Prerequisite: ENGR 101 or department-approved equivalent.

ENGR 171 Introduction to Logic Design 5 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.

ENGR 211 Statics 4 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.

ENGR 212 Dynamics 4 Kinematics and kinetics of particles and rigid bodies are analyzed by Newton’s laws, work-energy and impulse-momentum methods. Prerequisite: ENGR 211.

ENGR 213 Strength of Materials 4 Relationships between stress and strain in deformable solids are studied. Analysis is applied to axially-loaded members, circular shafts, beams and columns. Combined stresses, statically indeterminate systems and properties of structural materials are included. Prerequisite: ENGR 211.

ENGR 221 Electrical Circuits I 5 Introduces students to basic circuit elements and circuit analysis techniques. Covers Ohm’s and Kirchoff’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.

ENGR 222 Electrical Circuits 5 Covers RLC circuits, transformers, AC power, and three phase power. Explores steady state sinusoidal analysis and phasor techniques. Introduces the Laplace Transform. Also incorporates circuit simulation, math analysis software, and laboratory experiments to solidify classroom theory and practice. Prerequisite: ENGR 221.

ENGR 223 Electrical Circuits III 5 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 or concurrent enrollment: MTH 256.

ENGR 226 Plane Surveying 4 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.

ENGR 231 Material Science 4 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).

ENGR 262 Manufacturing Processes 4 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.

ENGR 275 Microprocessor Systems 4 Introduces X86 microprocessor architecture and assemble 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.

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.

ENGLISH FOR SPEAKERS OF OTHER LANGUAGES

ESOL 40 Level 4 Reading 4 The fourth level of ESOL and the first 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, inferring, 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 communicating in academic and adult life roles. Prerequisite: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 40/40N and ESOL 44/44N or higher.

ESOL 44 Level 4 Communication 4 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.

ESOL 140 American Culture and Communication I 3 Introduces and illustrates American cultural themes and values through instruction in reading, discussion, journal writing, film, and speeches. Introduction and beginning application of academic study skills. May include a service learning component. Does not replace courses in the core curriculum. Prerequisite: Placement in ESOL 150/150N and ESOL 152/152N and ESOL 154/154N or higher.

ESOL 150 Level 5 Reading 4 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, inferring, 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 communicating in academic and adult life roles. Prerequisite: ESOL placement test OR successful completion of ESOL 40/40N; AND concurrent placement in ESOL 42/42N and ESOL 44/44N or higher.

ESOL 152 Level 5 Writing 4 The fifth level of ESOL and the second of a 5-course sequence that focuses on writing. Review of the writing process and introduction to the essay. Descriptive, narrative, process and comparative/contrast. Review of basic grammar. Introduction to present perfect, gerunds and infinitives, and adverbial causes. Writing and grammar taught in the context of communicating in academic and adult life roles. Prerequisite: ESOL placement test OR successful completion of ESOL 42/42N; AND concurrent placement in ESOL 40/40N and ESOL 44/44N or higher.

ESOL 153 Grammar I 2 Includes the identification and practice of the following grammatical structures: subject-verb agreement, question and negation structure, verb tenses, sentence patterns, and sentence types. This elective class is designed to reinforce concepts in both oral and written contexts. Does not replace courses in the core curriculum. Prerequisites: Placement in ESOL
and practice of the following grammatical structures: verb tense review, active/passive voice, simple, compound and complex sentences, transitional words and phrases, clause and phrase reduction, parallel structures, modals, conditionals, and reported speech. Designed to reinforce concepts in both oral and written contexts. Does not replace courses in the core curriculum. Prerequisites: ESOL 173; or instructor permission.

ESOL 240 American Culture and Communication II 3 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 or ESOL 254 or higher.

ESOL 250 Level 7 Academic Reading 5 Content comprehension, textual analysis, critical thinking skills, study skills, and language analysis. Readings from textbooks, literature, and newspapers. Includes finding themes and main ideas, summarizing, paraphrasing, inferencing, using context clues, review of prereading techniques. Study of word forms and common affixes. Prerequisite: ESOL placement test OR successful completion of ESOL 150/150N; AND concurrent placement in ESOL 152/152N and 154/154N or higher.

ESOL 252 Level 7 Academic Writing 5 Review of the writing process and development of the essay. Covers descriptive, narrative, process, and comparison/contrast essays. Review of verb tenses, sentence types, and practice of the following grammatical structures: subject-verb agreement, verb tenses, passive voice, gerunds and infinitives. Designed to reinforce concepts in both oral and written contexts. Prerequisites: placement in ESOL 160 and ESOL 162 or ESOL 164 or higher. This elective class does not replace courses in the core curriculum.

ESOL 253 Grammar III 2 Includes the identification and practice of the following grammatical structures: subject-verb agreement; verb tenses; question and negation structure; gerunds and infinitives; and articles. Designed to reinforce concepts in both oral and written contexts. Does not replace courses in the core curriculum. Prerequisite: placement in ESOL 160 levels or above.

ESOL 254 Level 7 Academic Communication 5 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 argument and persuasion. Students review English consonants and vowels, intonation, phrasing, and stress patterns. Prerequisite: ESOL placement test OR successful completion in ESOL 250; AND concurrent placement in ESOL 252 and 254 or higher.

ESOL 265 Level 8 Academic Communication 3 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.

ESOL 267 Level 8 Pronunciation 2 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.

ENVIRONMENTAL STUDIES

ESR 150 Environmental Studies Orientation 1 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.

ESR 160 Intro to Environmental Systems 4 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).

ESR 171 Environmental Science: Biological Perspectives 4 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.

ESR 172 Environmental Science: Chemical Perspectives 4 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.

ESR 173 Environmental Science: Geologic Perspectives 4 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, RD 115 and MTH 20 or equivalent placement test scores.

ESR 201 Applied Environmental Studies: Science/Policy Consideration 4 Introduces environmental laws and the regulations promulgated under them. Includes examinations of the genesis of these laws (eg. NEPAA, Clean Air and Water Acts, RCRA, Endangered Species Act) and their history of compliance and violation. Prerequisite: ESR 160.

ESR 202 Applied Environmental Studies: Prep for Problem Solving 4 Includes environmental sampling, sampling design, and measurement in relation to the field experience. Prerequisite: ESR 160.

ESR 203 Applied Environmental Studies: Project 4 Uses project work involving work with an environmental agency, industry, service or research organization. Prerequisite: ESR 202.

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.

ETC 103 Introduction to Emergency Telecommunications 4 Introduces the field of emergency communications. Includes history, role of the dispatcher, field operations (police, fire and emergency medical), radio broadcasting, telephone techniques, radio codes and equipment operation. Presents an overview of federal, state and local agencies and their respective communication systems.

ETC 104 Emergency Telecommunications - Call Taking 4 Introduction to the field of emergency communications, with an emphasis on: history, roles of dispatchers in fire and medical emergencies. Confidentiality and liability issues and personality characteristics of emergency services personnel are explored. An overview of the structure and organization of the fire service and of the emergency medical dispatch system. Includes the terminology of the fire service and medical field and application of protocols for emergency response. Prerequisite: ETC 103.

ETC 105 Crisis Intervention & Critical Incident Stress Management 3 Focuses on the emotional and psychological needs of police, telecommunications, firefighters, emergency medical providers and other emergency responders in dealing with daily crisis and trauma situations. Explores both individual crises and large scale disasters impacting entire communities. Evaluates the resources available to responders and to the public. Examines the Critical Incident Stress Management model and how it is utilized within various agencies. Teaches methods and techniques for dealing with high stress of long-term emergency service careers.

ETC 106 Introduction to Criminal Law 3 Covers the origin, structure and definitions of common law and statutory crimes, the Oregon Criminal Code and criminal court procedures.

ETC 108 Transcription for Telecommunications 2 Develops keyboarding skills based on information received aurally. Utilizes dictation of emergency response information, such as locations, names, and numeric data in various formats. A variety of software applications are used including Word, Excel, Critical and several Computer-Aided Dispatch Programs. Simulated emergency telephone calls, radio broadcasts and tape recorded incidents are used to practice skills inputting data, accurately recording, abbreviating, coding and formatting information. Speed accuracy and brevity are important components of this course. A keyboarding ability of approximately 25 wpm is recommended.

ETC 110 Communication Center Operations - Basic Skills 3 Introduction to the emergency communications simulator lab. This course involves the use of emergency communications equipment and standard operating procedures to simulate actual emergency calls and situations. Overview of the roles and responsibilities of emergency communications professionals in their work environment. Application of methods and theory obtained through classroom presentations, in an interactive lab setting, using radio, telephone, computers, recording equipments and various pre-employment screening tools.

ETC 111 Communication Center Operations - Intermediate Skills 3 Introduction to the art of multi-discipline emergency response dispatching in an emergency communications simulation center. The course involves the use of emergency communications equipment and the application of policies, procedures and protocols to specific situations. Scenarios will be complex, may involve multiple responses and may have a high level of impact on individuals or the community. Identification and notification of a wide variety of resources both local and state will be included in simulation. Prerequisite: ETC 110.

ETC 112 Communication Center Operations- Advanced Skills 3 This is the third in a series of 9-1-1 simulation labs designed to build skills in emergency call-taking and emergency services radio communication. The types of calls handled will involve volatile situations, such as, crimes in progress, incidents involving weapons, serious injuries or those having a severe impact upon individuals and the community. This course demands a high level of multi-tasking ability, quick responses and rapid problem-solving skills, as well as a familiarity with 911 computer software and multi-function telephone systems. Prerequisites: ETC 110 and ETC 111.

ETC 115 Emergency Telecommunicator-Capstone 3 Provides the opportunity to demonstrate and document a variety of activities completed during the two-term program. Skills learned and the practical application of various lab techniques will be presented in a portfolio that may be used by prospective employers to determine job readiness. Pre-employment testing and screening will be covered, as well as, a variety of community based activities. Students will be prepared to sit for various state level certifications in emergency services related competencies, such as, law enforcement computer access, and emergency medical dispatch protocols.

ETC 201 Law Enforcement Data System (LEDS) 1 LEADS is the State of Oregon Law Enforcement data network. This course is designed as an overview of the LEADS system and to provide certification at the lowest level (Inquiry). Students will use the LEADS Operating Manual to format requests for information and to access links to state and local computer systems, as well as the National Crime Information System (FBI). State certification requires the application of certain programs to test records in the live system. Prerequisite: ETC 103.

ETC 202 Emergency Medical Dispatch Overview 2 Emergency Medical Dispatching consists of 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. This overview explores the basic concept of emergency medical assistance delivered over the telephone and familiarizes the student with various protocols for dealing with specific emergency situations. Prerequisite/Concurrent: EMT 120 or current 1st Aid/CPR certification.

ETC 203A Tactical Dispatching for High Risk Incidents 1 High risk incidents such as kidnaping, 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. This course through the use of scenarios and role-playing allows the student to test these skills in a safe environment. Prerequisite: ETC 103 Prerequisite/corequisite: ETC 104.

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 credit hours and 6 credits of lab hours.

FD 277 Fashion Trend Analysis 3 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.
FMT 100 Introduction to Facilities Maintenance Systems 2 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 interdependence 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.

FMT 101 Refrigeration I 2 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. FMT 101 and APR 131 both cannot be taken for credit. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores.

FMT 102 Refrigeration II 2 Cover and analyze 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. FMT 102 and APR 132 cannot both be taken for credit. Prerequisites: FMT 101 or APR 131 or TE 9242.

FMT 103 Refrigeration III 2 Covers the operation of refrigeration HVAC systems, emphasizing maintenance and controls. Lab includes troubleshooting systems along with evacuation and charging techniques. FMT 103 and APR 133 cannot both be taken for credit. Prerequisites: FMT 102 or APR 132 or TE 9243.

FMT 111 Refrigeration Electrical I 2 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.

FMT 112 Refrigeration Electrical II 2 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.

FMT 113 Refrigeration Electrical III 2 Schematic development and use in diagnosis, service, and repair of HVAC systems; control applications and circuit evaluation. Prerequisites: FMT 112 or TE 9238.

FMT 119 Water Treatment and Distribution 2 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.

FMT 122 Introduction to Boilers 3 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.

FMT 125 Natural Gas Equipment I 2 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.

FMT 128 Oil Furnace Service 2 Covers oil burner service and installation procedures, fuel oil principles, motors, fan couplings, nozzles, transformers burner construction, pumps, controls and troubleshooting procedures.

FMT 131 Lock Service and Repair 4 Covers maintaining residential and commercial locks and related hardware. Includes basic operating principles of cylinders, types of locking mechanisms, desk type locks, and master key systems.

FMT 201 Introduction to Chiller Systems 3 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.

FMT 202 Direct Digital Control Advanced Technology 3 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.

FMT 204 Heat Pumps 3 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.

FMT 207 Pneumatic Controls 2 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.

FMT 210 Basic HVAC/R Installation & Techniques 2 Introduces basic 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).

FMT 213 Commercial Refrigeration Shop 2 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).

FMT 216 Commercial Systems Design 3 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.

FMT 219 Residential Systems Roofing 3 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.

FMT 222 Intermediate Boilers 3 Fundamentals of hydronics systems related to electrical controls and fluid flow. Includes burner control system, schematic diagrams, distribution systems, heat emitters, radiant floor heating, expansion tanks; entrained air, and auxiliary heat loads. Prerequisites: FMT 122 or TE 9161.

FMT 265 Building Commissioning I 3 Covers the efficient operation of building systems to ensure that buildings are designed, installed, functionally tested, and maintained according to the owner's operational needs. Includes verification of specified restoration of existing buildings to high, efficient productivity through renovation, upgrade, and the tune up of existing systems. Prerequisite: Placement into WR 121 and MTH 20, or department permission.

FMT 280A Cooperative Work Experience Provides "hands-on" work experience for students enrolled in Facilities Maintenance Technology. Department permission required.

FN 110 Personal Nutrition 2 Basic nutrition course for students with little or no science background. Explores personal food habits and beliefs. Emphasizes practical application of nutrition knowledge to enhance general health. Analyze present diet and evaluate it according to latest nutritional guidelines.

FN 225 Nutrition 4 Introduces components of an adequate diet, nutrient availability and utilization. Analyze dietary intake and compare to current scientific guidelines. Examines peripheral factors influencing diet such as global and local issues, cultural environment, and elements of food safety. Strong background in life sciences recommended. Prerequisite: WR 121, MTH 60 or higher; and BI 231 or FT 131.

FN 225X Nutrition Bridge 1 Study the principles of diet therapy, routine hospital diets and commonly used diet modifications in therapeutic care. Diseases and conditions associated with the gastrointestinal tract, cardiovascular system and diabetes are emphasized. Learn the specific roles of the health care team members in nutrition care management of the institutionalized patients.

Course Descriptions

FIRE PROTECTION

FP 101 Introduction to Fire Protection 3 Studies the history and development of fire service as well as safety and security movements. Identifies general fire hazards and their causes and how to apply fire protection principles.

FP 111 Firefighter I Skills Academy 10 Designed to meet NFPA Standard 1001 “Firefighter I” training requirements, this course provides a program that presents comprehensive training in all aspects of basic firefighting skills. Knowledge obtained from classroom instruction is transferred to drill ground application, during hands-on training. Students study basic tools, procedures, techniques and safety precautions utilized by fire fighters, during fire ground operations. PCC department application acceptance required.

FP 112 Firefighter II Skills Academy 7 Designed to meet NFPA Standard 1001 “Firefighter II” training requirements, this course continues to develop basic fire fighter skills learned in FP 111 while increasing technical knowledge of fire ground operations, placing more emphasis on team skills, through evolutions, and live fire training. Prerequisite: FP 111.

FP 113 Firefighting Skills III 4 Studies advanced fire fighting skills and applies these skills during weekly drill activities. Equipment and procedures learned in FP 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 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 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 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 0.5 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 rescuer safety will be covered. Practices basic rappel, relay and victim retrieval techniques.

FP 132 Fire App/Pump Construction Operation and Hydraulics 3 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 Trains students in the basic skills required for wildland fire fighting. 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 0.5 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 0.5 Studies aircraft and airport systems, practical procedures, techniques, and safety precautions utilized by rescue personnel during aircraft crash and rescue response. Organization of a crash rescue team, equipment requirements, scene evaluation, and tactical and strategic considerations are covered. Prerequisite: FP 111.

FP 152 Emergency Response to Terrorism 2 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 0.5 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 Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Recommend: MTH 65.

FP 201 Emergency Service Rescue 4 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 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 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 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.

FP 210 Multicultural Strategies for Firefighters 3 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.

FP 211 Building Construction for Firefighters 3 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 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 Studies fireline supervision. Future fire supervisors concentrate on the responsibilities of and opportunities for supervision, develop an understanding of human relations and study how to stimulate personal development of supervisory skills. Prerequisite: FP 111.

FP 214 Occupational Safety & Health for the Fire Science 3 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 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 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 Pump Construction and Hydraulics II 2 Practical procedures, techniques, and safety precautions used during apparatus operations. Covers the history and development of fire apparatus capabilities, pump
construction, procedures for operation and hydraulic formulas used to calculate flow requirements. Operational techniques required to operate an engine at a multiple alarm fire will be practiced. FSAB Apparatus Operator II (26-01), (26-02), (26-03). Prerequisite: FP 132.

FP 233 Aerial Ladder Operations for Firefighters 3 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 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 242 Flammable, Explosive and Toxic Materials 3 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 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 250 Emergency Services Instructor II 3 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 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 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 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 rescuer drown-proofing will be covered. Victim retrieval, rescue swimming and search techniques will be practiced. Prerequisite: FP 201.

FP 280A Cooperative Education: Fire Science 3 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 Department permission required.

FP 283 Public Sector Employment Workshop (Fire) 3 Provides the opportunity to develop skills needed to successfully complete Civil Service and Public Sector employment examinations.

FP 293 Advanced Firefighting Tactics & Strategy 1 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 9010 Fire Management Practices 1 Outlines basic management skills for the mid-level manager. Includes organizational structure, communicating, financial management and controlling resources. Prerequisite: FP 213.

FP 9020 Fire Department Budgets 1 Outlines the budget process as required by Oregon laws to include types of budgets, the process of preparing the budget and classifying expenditures. Prerequisite: FP 213.

FP 9030 Planning Fire Protection 1 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.

FP 9040 Managing Fire Personnel 1 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.

FP 9050 Public Relations Information and Education 1 Covers company officer supervisory responsibilities for a basic understanding of public relations, information and fire education. Designed to offer a brief overview of this topics. Prerequisite: FP 213.

FP 9060 Fire Science II Chemistry 3 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 emissions. Prerequisite: MTH 60.

FP 9070 Major Emergency Tactics/Strategy 3 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.

FP 9080 Fire Fighting Safety & Survival for Company Officers 1 Covers safety on the fireground, equipment, the officer’s role in modifying behavior and identifying hazardous situations. Identifies state safety rules.

FP 9110 Fire Inspection Practices 3 Studies the various steps to be followed prior to and during an actual fire inspection. The legal aspects of fire inspections on both new and existing structures are covered. Prerequisites: FP 122, 202, 211.

FP 9120 Fire Codes & Related Ordinances 3 Studies fire, building, exit, flammable liquid and other fire prevention codes. Students go on supervised building inspection field trips. Primarily for fire department inspectors. Prerequisites: FP 122, 202, 211.

FP 9130 Hazardous Materials Inspection 3 Studies state codes and regulations pertaining to hazardous material storage, labeling, incident reporting, inspection and handling. Discusses characteristics and identification of hazardous materials, hazards associated with flammable, explosive, toxic, radioactive, corrosive and oxidizing agents. Prerequisites: FP 122, 202, 211.

FP 9140 Fire Officer I 4 Designed to meet National Fire Protection Association Standard 1021 (NFPA). Includes a contemporary look at the duties and responsibilities of first level supervisors. Covers first level supervisory functions associated with human resource management, community and government relations, fire administration, inspection and investigation emergency service delivery and safety.

FP 9150 Fire Officer II 4 Designed to meet NFPA qualifications. Includes contemporary look at duties and responsibilities of fire service supervisor. Covers company officer supervisory functions associated with human resource management, community and government relations, fire administration, inspection and investigation emergency service delivery and safety. First level supervisory and middle management responsibilities will be discussed and contrasted with Fire Office II duties and responsibilities.

FP 9210 Arson Law, Evidence, Motives 3 Introduces common law, statutory law and case law pertaining to arson and other willful burning. Arson as an economic crime and a part of organized crime operation is also discussed. Prerequisite: FP 212.

FP 9250 Advanced Fire and Arson Investigation 4 Examines areas of knowledge necessary for the identification and investigation of specific causes of fires. Designed to expand on information introduced in FP 212. Prerequisite: FP 212 or instructor permission.

FR 101 First Year French 4 Introduction to French stressing 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. Proficiency target level: Novice high. For beginners.

FR 102 First Year French 4 Continues work of FR 101, further developing all skills. Primary emphasis on the student’s active use of the language. Proficiency target level: Intermediate low. Recommended: Completion of FR 101 or 150 or instructor permission.

FR 103 First Year French 4 Continues the work of FR 102, further developing all skills. Primary emphasis on the student’s active use of the language. Proficiency target level: Intermediate mid. Recommended: Completion of FR 102 or instructor permission.

FR 111A First Year French Conversation 3
Course Descriptions

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.

FR 111B First Year French Conversation 2
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.

FR 111C First Year French Conversation 1
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.

FR 112A First Year French Conversation 3
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.

FR 112B First Year French Conversation 2
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.

FR 112C First Year French Conversation 1
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.

FR 113A First Year French Conversation 3
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.

FR 113B First Year French Conversation 2
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.

FR 113C First Year French Conversation 1
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.

FR 150 First Year French 6
For beginners. Introduction to French stressing 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. Proficiency target level: Novice high to intermediate low.

FR 151 First Year French 6
Continues the work of FR 150, further developing all skills. Primary emphasis on the student's active use of the language. Also provides a review before entering second year French. Proficiency target level: Intermediate mid. Recommended: Completion of FR 102 or 150, or instructor permission.

FR 201 Second Year French 4
Continues the work of first year French, reviewing, expanding, and perfecting listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on the student's active use of the language. Proficiency target level: Intermediate mid; the successful student will be able to handle a variety of basic communicative tasks and social situations. Recommended: Completion of first year French at the college level or instructor permission.

FR 202 Second Year French 4
Continues the work of FR 201, reviewing, expanding, and perfecting listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on student's active use of the language. Proficiency target level: Intermediate mid to high; the successful student will be able to handle a variety of basic communicative tasks and social situations. Recommended: Completion of FR 201 or instructor permission.

FR 203 Second Year French 4
Continues the work of FR 202, reviewing, expanding, and perfecting listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on student's active use of the language. Proficiency target level: Intermediate high; the successful student will be able to handle most uncomplicated communicative tasks and social situations. Recommended: Completion of FR 250 or instructor permission.

FR 251 Second Year French 6
Continues the work of FR 250, reviewing, expanding, and perfecting listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on student's active use of the language. Proficiency target level: Intermediate high; the successful student will be able to handle most uncomplicated communicative tasks and social situations. Recommended: Completion of FR 201 or instructor permission.

FR 255 Accelerated French 8
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 student's active use of the language. Recommended to the highly motivated student. Proficiency target level: Intermediate mid; the successful student will be able to handle a variety of basic communicative tasks and social situations. Recommended: Completion of FR 102 or 255, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

FR 256 Accelerated French 8
Covers the material of FR 103 and FR 201 in an accelerated format. Stresses the development of listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on 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 a variety of basic communicative tasks and social situations. Recommended: Completion of FR 250 or 256, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

FR 257 Accelerated French 8
Covers the material of FR 202 and FR 203 in an accelerated format. Stresses the development of listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on 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 201 or 256, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

FR 260A French Culture 3
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.

FR 260B French Culture 2
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.

FR 260C French Culture 1
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.
FR 261A French Culture 3 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.

FR 261B French Culture 2 Continuation of FR 260B. Recommended: Completion of two terms of second year French at the college level or instructor permission.

FR 261C French Culture 1 Continuation of FR 260C. Recommended: Completion of two terms of second year French at the college level or instructor permission.

FR 262A French Culture 3 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.

FR 262B French Culture 2 Continuation of FR 261B. Recommended: Completion of second year French at the college level or instructor permission.

FR 262C French Culture 1 Continuation of FR 261C. Recommended: Completion of second year French at the college level or instructor permission.

FR 270A Readings in French Literature 3 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.

FR 270B Readings in French Literature 2 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.

FR 270C Readings in French Literature 1 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.

FR 271A Readings in French Literature (African & Caribbean) 3 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.

FR 271B Readings in French Literature (African & Caribbean) 2 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.

FR 271C Readings in French Literature (African & Caribbean) 1 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.

FR 272A Readings in French Literature (Women Writers) 3 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.

FR 272B Readings in French Literature (Women Writers) 2 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, 251 or FR 257; or instructor permission.

FR 272C Readings in French Literature (Women Writers) 1 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, 251 or FR 257; or instructor permission.

FR 290A French Speaking and Writing 3 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.

FR 290B French Composition 2 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.

FR 290C French Composition 1 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.

FR 291A French Composition 3 Practice in developing composition skills. Recommended: Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

FR 291B French Composition 2 Continuation of FR 290B. Recommended: Instructor permission.

FR 291C French Composition 1 Continuation of FR 290C. Recommended: Instructor permission.

FR 292A French Composition 3 Continuation of FR 291A. Recommended: Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

FR 292B French Composition 2 Continuation of FR 291B. Recommended: Instructor permission.

FR 292C French Composition 1 Continuation of FR 291C. Recommended: Instructor permission.

FT 101 Fitness Technology Seminar 3 Explore careers in the fitness and health industry. Obtain 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. Develop practical knowledge and skill in teaching psychomotor movement. Learn the necessary concepts, skills, and methodology required in becoming a successful instructor of movement. Recommend: Admittance to Fitness Technology Program.

FT 102 Injury Prevention & Management 3 Provides information and knowledge concerning prevention & rehabilitation of athletics/sports/fitness injuries. Emphasis is placed on preventing injuries from occurring, learning strategies for reducing athletes' risk of injury or illness, creating safe environments, ensuring proper fit & use of protective sporting equipment and developing emergency action plans. Students who satisfactorily complete the requirements will be eligible for the following American Red Cross certifications: 1) Sports Safety Training, 2) First Aid, 3) CPR/AED - Adult & Child.

FT 103 Nutrition for Fitness Instructors 3 An overview of basic principles of nutrition with an emphasis on application to fitness, weight management and athletic performance Recommended: Completion of FN 225. Prerequisites: HPE 295, WR 121 and MTH 65

FT 104 Fitness Assessment & Programming I 3 Introduces fitness testing for apparently healthy populations. Covers cardiovascular fitness, muscular strength and endurance, flexibility, nutrition, and body composition in both individual and group assessments. Prerequisites: HPE 295 and FT 101.

FT 105 Fitness Assessment & Programming II 3 Second course in sequence of Fitness Assessment and Programming. Introduces individual and group exercise plans and progressions, and recreational program planning. Covers reassessment and exercise compliance. Prerequisites: FT 104.

FT 106 Analysis of Movement 3 Studies and analyzes human posture and movement as it applies to physical fitness and sport. Uses knowledge to design effective and safe exercise programs. Prerequisite: FT 131

FT 107 Exercise Science 13 Studies and analyzes human posture and movement as it applies to physical fitness and sport. Uses knowledge to design effective and safe exercise programs. Prerequisite: FT 131

FT 131 Structure & Function of the Human Body 4 Presents basic principles in anatomy, physiology, and exercise science. This class will introduce 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. Prepares students who are in the Fitness Technology program for their future course work.

**FT 201 Fitness Assessment and Program III 3** Third in sequence of Fitness Assessment and Programming. Covers advanced testing procedures, assessments for special populations, exercise programming for special populations, and exercise programming for group exercise. Prerequisites: FT 105, PE 281, 282B, and 282A or 287.

**FT 202 Fitness and Aging 3** Explores physiological aspects of aging as applied to fitness and exercise. Prerequisites: FT 107 and PE 282B

**FT 203 Fitness Promotion 3** Develops skills to promote healthy and fit lifestyles to both individuals and groups. Learn skills to promote oneself in the job market. Applies skills gained from a variety of fitness disciplines. Prerequisites: 5th term standing in Fitness Tech Program or instructor permission

**FT 204 Exercise Science II 3** Continues application of physiological concepts from Exercise Science I. This course will introduce environmental conditions, ergogenic aids, advanced training adaptations, and clinical exercise physiology. Students will spend additional time in the lab setting learning metabolic and ECG stress testing. Prerequisite: FT 107.

**FT 280 Cooperative Education: Fitness Technology** Provides required internship experiences for Fitness Technology majors. Required: 3rd term standing for Certificate students, 6th term standing for AAS Degree students in Fitness Tech program or instructor permission; must have current First Aid and CPR card.

### GEOLOGY

**G 160 Geology: Oregon Coast 2** Designed to introduce the relationships between the biology and geology of the Oregon Coast.

**G 161 Geology: Malheur Region 2** 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 or concurrent enrollment: G 201 or instructor permission.

**G 201 Physical Geology 4** Introduces physical geology which deals with minerals, rocks, internal structure of the earth and plate tectonics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**G 202 Physical Geology 4** Introduces physical geology which deals with mass wasting, streams, glaciers, deserts, beaches, groundwater, and use of topographic maps. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**G 203 Historical Geology 4** Introduces historical geology which deals with geologic time, fossils, stratigraphic principles, and the geologic history of the North American continent. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**G 207 Geology of the Pacific Northwest 3** 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. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**G 208 Volcanoes and Their Activity 3** Covers the origin, activity, products, classification and hazards of volcanoes. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**G 209 Earthquakes 3** 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 20 or equivalent placement test scores.

**G 291 Elements of Rocks and Minerals 4** 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. Prerequisite: WR 115, RD 115, MTH 20 or equivalent placement test scores.

### GRAPHIC DESIGN

**GD 101 Macintosh for Graphic Designers 1** 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 WR 121.

**GD 114 Introductory Typography 3** Designed to introduce type as a design element. This non-computer course emphasizes exploration 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** 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** 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** 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** 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** 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** Intermediate course covering professional layout and design of multi-page documents. Focuses on using creativity to solve design projects. Additional course topics include basic press and output, file management and industry-standard design processes. Placement permission slip required. Prerequisite: GD 140.

**GD 150 Digital Illustration I 3** 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. Prerequisite: GD 101, GD 114, and GD 120. Prerequisite/concurrent: GD 122

**GD 151 Digital Illustration 2 3** 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** 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** Introduces Photoshop tools and techniques combined with basic design and composition principles. Ideal for learning digital photo page layout and design. Macintosh experience highly recommended.

**GD 221 Graphic Design 4 3** Focuses on publication design. Single-page and multiple-page projects will emphasize hierarchy, eyeflow, structure and organization. Projects, lessons and exercises are intended to build 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** Focuses on publication design. Single-page and multiple-page projects will emphasize hierarchy, eyeflow, structure and organization. Projects, lessons and exercises are intended to build on first-year skills in typography and design using professional page layout software. Advanced computer produc-
### GEOGRAPHY

**GEO 105 Introduction to Human Geography**
4 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.

**GEO 106 Geography of the Developed World**
4 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.

**GEO 107 Geography of the Developing World**
4 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.

**GEO 204 Geography of Middle East**
4 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.

**GEO 206 Geography of Oregon**
4 Examines various historical, social, economic and geographic factors that have made the Oregon landscape unique. Slides, films, videos, and overhead transparencies are utilized. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**GEO 209 Physical Geography: Weather and Climate**
4 Examines the processes of the atmosphere, the distribution and character of climate types, climate change and humankind as a moderator of climate. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.
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.

GERMAN

GER 101 First Year German 4 For beginners. First term of a three-term sequence. Students develop basic language skills in German: listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. At the end of this course the student will begin to communicate in common day-to-day interactions.

GER 102 First Year German 4 Second term of a three-term sequence. Continues the work of GER 101. Students continue to develop skills in listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. At the end of this course the student will communicate in common day-to-day interactions. Recommended: Completion of GER 101, 150 or instructor permission.

GER 103 First Year German 4 Third term of a three-term sequence. Continues the work of GER 102. Students become adept at skills in listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. On completion, the student will be able to converse in a variety of situations. Recommended: Completion of GER 102, 151 or instructor permission.

GER 111A First Year German Conversation 3 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.

GER 111B First Year German Conversation 2 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.

GER 111C First Year German Conversation 1 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.

GER 112A First Year German Conversation 3 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.

GER 112B First Year German Conversation 2 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.

GER 112C First Year German Conversation 1 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.

GER 113A First Year German Conversation 3 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.

GER 113B First Year German Conversation 2 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.

GER 113C First Year German Conversation 1 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.

GER 150 First Year German 6 For beginners. First term of a two-term sequence which equals one full year of German. Students develop basic language skills in German: listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. At the end of this course the student will communicate in common day-to-day interactions.

GER 151 First Year German 6 Second term of a two-term sequence. Continues the work of GER 150. Students become adept at skills in listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. On completion, the student will be able to converse in a variety of situations. Recommended: Completion of GER 150 or instructor permission.

GER 201 Second Year German 4 First term of a three-term sequence that continues the work of first year German. Students expand on their skills in the five language areas: listening, speaking, writing, reading, and culture. Emphasizes proficiency in spoken German. Recommended: Completion of first year college German or instructor permission.

GER 202 Second Year German 4 Second term of a three-term sequence. Students continue to expand on their skills in the five language areas: listening, speaking, writing, reading, and culture. Emphasizes proficiency in spoken German. Recommended: Completion of GER 201, 250 or instructor permission.

GER 203 Second Year German 4 Third term of a three-term sequence. Students continue to expand on their skills in the five language areas: listening, speaking, writing, reading, and culture. Emphasizes proficiency in spoken German. Recommended: Completion of GER 202, 250 or instructor permission.

GER 211A Intermediate German Conversation 3 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.

GER 211B Intermediate German Conversation 2 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.

GER 211C Intermediate German Conversation 1 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.

GER 212A Intermediate German Conversation 3 Stresses conversational skills at the second year level. Continues the work of GER 211A. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission.

GER 212B Intermediate German Conversation 2 Stresses conversational skills at the second year level. Continues the work of GER 211B. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission.

GER 212C Intermediate German Conversation 1 Stresses conversational skills at the second year level. Continues the work of GER 211C. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission.

GER 213A Intermediate German Conversation 3 Stresses conversational skills at the second year level. Continues the work of GER 212A. Recommended: Completion of or simultaneous enrollment in GER 203 or instructor permission.

GER 213B Intermediate German Conversation 2 Stresses conversational skills at the second year level. Continues the work of GER 212B. Recommended: Completion of or simultaneous enrollment in GER 203 or instructor permission.

GER 213C Intermediate German Conversation 1 Stresses conversational skills at the second year level. Continues the work of GER 212C. Recommended: Completion of or simultaneous enrollment in GER 203 or instructor permission.

GER 260A German Culture Through Film 3 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: interacial 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 260B German Culture Through Film 2 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: interacial 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.

GER 260C German Culture Through Film 1 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: interacial 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.

GER 261A German Culture Through Film 1 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: inter-racial and cultural relations, racism, the New German Cinema, morality of the bourgeoisie, alienation of youth, roles of German men and women, self-discovery, moral disorder 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 261B German Culture Through Film 2 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: inter-racial 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 disorder 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 261C German Culture Through Film 3 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 261 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 262A German Culture Through Film 1 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 262B German Culture Through Film 2 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: inter-racial 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 disorder 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 262 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 262C German Culture Through Film 1 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 263A German Culture Through Film 1 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: inter-racial 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 disorder 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 263 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GER 263B German Culture Through Film 2 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: 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 263 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.
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.

GRN 266 Activity Professional Training 2 3 Course provides didactic and experimental learning to prepare management level careers as an activity professional with older adults in long term care facilities, adult daycare and community settings. Includes professional responsibilities of the Activity Director, the system of activity program development in diverse settings, administrative practices in the Activity Profession, communications, leadership, and community relations. Prerequisite: GRN 265

GRN 267 Introduction to Professional Therapeutic Horticulture 2 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 interdisciplin ary collaboration/integration in healthcare delivery; medical terminology; volunteer program development; professional resources and horticulture skills development for therapy.

GRN 268 Techniques & Adaptive Strategies in Therapeutic Horticulture 2 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.

GRN 269 Therapeutic Horticulture Skills I 2 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.

GRN 270 Therapeutic Horticulture Programming for Adults & Children 2 Introduces therapeutic horticulture program models; human development models; issues in aging, frailty, dementia, and the continuum of care; intergenerational program models; assessment, documentation, and treatment planning; activity, thematic and seasonal planning; case study writing; marketing and public relations; program evaluation; and general issues in therapeutic garden design, maintenance and programming for children and frail elders. Students must have completed GRN 269 or the equivalent course offered through the Legacy Therapeutic Horticulture Program.

GRN 271 Therapeutic Horticulture Skills II 2 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, pediatric, developmentally disabled, neurologically impaired and other special needs populations. Focuses on professional skill mastery and continuing education planning. Students must have completed GRN 270 or the equivalent course offered through the Legacy Therapeutic Horticulture Program.

GRN 272 Therapeutic Garden Design, Maintenance & Programming 3 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.

GRN 280A CE: Gerontology Internship 2 Students engage in intentional internships to gain practical experience, skill development and professional direction in achieving their career goals, working under supervision in an approved worksite. Prerequisite: Instructor approval.

GRN 280B Gerontology Internship Seminar 1 Students prepare for intentional internships appropriate to their career pathway, identify and negotiate worksite placements, and acquire skills essential for successful internships. Course focuses on work-based learning outcomes, working under supervision, effective communication and teamwork in organizations, stress and conflict management, professional ethics, boundary setting, and burnout prevention. Prerequisite: CG 181 or GRN 181.

GRN 282 Gerontology Professional Seminar 1 Seminar provides gerontology students close to graduation the opportunity to participate in a supportive seminar environment with other gerontology students. Prerequisites: WR 121, RD 121, MTH 20 or equivalent placement test scores.

HE 110 Cardiopulmonary Resuscitation 1 Provides education and training in infant, child and adult CPR, respiratory emergencies and cardiac arrest.

HE 112 First Aid and Emergency Care 1 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.

HE 125 First Aid & Industrial Safety 3 Presents overview of industrial safety regulations, accident prevention, ergonomics, hazardous materials, first aid and adult CPR. Successful students attain a First Aid and Adult CPR card.

HE 212 Women's Health 4 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.

HE 213 Men's Health 4 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.

HE 242 Stress and Human Health 4 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.

HE 250 Personal Health 3 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.

HE 251 Community and Public Health Issues 4 Inquires into the causes and potential solutions for current community health issues, reviews the organization of community and health care agencies, and explores career opportunities in community health. Includes Service Learning.

HE 252 First Aid - Basics and Beyond 4 Explores and demonstrates basic first aid, addresses first aid in remote settings, and provides education and training in Automated External Defibrillators (AED) and Bag Valve Mask. A student who satisfactorily completes the
HE 267 Health, Food Systems, and the Environment 3 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.

CONSUMER AND FAMILY STUDIES

HEC 157 Parenting Skills 1 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.

HEC 201 Family Partnerships in Education 3 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.

HEC 226 Child Development 4 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.

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.

HEC 9421 Living and Learning with Your Toddler 1 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.

HEALTH INFORMATION MANAGEMENT

HIM 105 Ancillary Information Analysis 3 Develops knowledge of health care ancillary services, laboratory tests, and imaging services. English communication skills necessary.

HIM 107 Ancillary Information Analysis Lab 1 Develops proficiencies in the skills taught in HIM 105. Corequisite: HIM 105.

HIM 110 Health Information Technology I 4 Introduces the concept of health information management and health informatics including the components of content, use 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.

HIM 120 Health Information Technology I Lab 1 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 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.

HIM 128 Anatomy & Physiology for Health Information Management I 4 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.

HIM 129 Anatomy & Physiology for Health Information Management II 4 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.

HIM 131 Medical Science 5 Concepts of disease processes as they relate to the normal physiology of the major body systems.

HIM 136 Medications 3 Covers appropriate drug uses, effects, dangers, and precautions; routes of administration. Review common prescription abbreviations, forms of medications and basic drug categories.

HIM 141 Health Information Technology 2 3 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.

HIM 182 Health Care Delivery Systems 3 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.

HIM 270 Classification Systems I 4 Classification of diseases and current reimbursement systems utilizing ICD. Prerequisite: HIM 105, HIM 107, HIM 110, HIM 120, HIM 131, HIM 182, MP 111, (BI 122 or BI 233 or HIM 129).

HIM 271 Quality Improvement in Healthcare 3 Covers medical staff organization, physician credentialing, and quality improvement techniques in the healthcare setting.

HIM 272 Health Information Management 3 Principles of personnel supervision and management of a health information department.

HIM 273 Classification Systems II 4 Continuation of HIM 270. Prerequisite: HIM 270

HIM 274 Quality Improvement in Healthcare Lab 1 Corequisite: HIM 271.

HIM 275 Classification Systems III 3 Introduces coding and classification systems for outpatient procedures and ambulatory care facilities. Prerequisite: HIM 105, 110, 120, 131, 182, MP 111, and (BI 122 or BI 233 or HIM 129).

HIM 276 Classification Systems Lab 2 Laboratory course for HIM 273 and HIM 275. Allows students to practice the skills and apply the knowledge learned in Classification Systems 2 and Classification Systems 3. Corequisites: HIM 273

HIM 277 Health Information Management Lab 2 Develop proficiencies in the skills included in HIM 272. Corequisite: HIM 272.

HIM 281 Data Management & Analysis I 3 Collection, retrieval, analysis, and quality review of administrative and clinical information and data.

HIM 282 Data Management & Analysis II 3 Statistical analysis and presentation of administrative and clinical information and data. Prerequisite: HIM 281.

HIM 283 Health Information Systems 4 Introduces the history and current status of information systems in health care: information architecture, 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 ensure 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.

HIM 285 Healthcare Financing and Compliance 3 Provides an understanding of the essential components of financing and compliance in health care facilities.

HIM 286 Data Management and Analysis I Lab 2 Laboratory course for HIM 281. Allows students to practice skills and apply the knowledge learned in Data Management and Analysis I. Corequisite: HIM 281.
HIM 290 Health Information Technology III 3 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.

HIM 292 Health Information Directed Practice I 1 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 II 1 Work under supervision of facility personnel in local health care facilities. Experience actual working conditions and various aspects of medical records.

HIM 295 Certification Review Seminar 1

HONORS

HON 101 Introduction to Honors: Scholarly Inquiry 2 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 for transfer. Prerequisite: 3.25 GPA.

HORTICULTURE

HOR 226 Plant Materials - Deciduous 4 Botanical characteristics and field identification. Cultural requirements, pests, diseases, and landscape uses of plants with concentration on deciduous material and plants of Fall interest.

HOR 227 Plant Materials - Evergreens 4 Botanical characteristics and field identification. Cultural requirements, pests, diseases, and landscape uses of plants with concentration on deciduous material and plants of Winter interest.

HOR 228 Plant Materials - Flowering 4 Botanical characteristics and field identification. Cultural requirements, pests, diseases, and landscape uses of plants with concentration on flowering plants and plants of Spring interest.

HOR 255 Spring Annuals and Perennials 3 Identification of Spring herbaceous annuals and perennials most commonly used in landscapes. Care, culture, pests, diseases, propagation and landscape use.

HOR 266 Interior Plants 3 Identification of interior plants commonly used in interior plantscaping. Cultural requirements, pests, diseases, propagation and interior use covered.

HOR 272 Summer Annuals & Perennials 3 Identification of summer herbaceous annuals and perennials most commonly used in landscapes. Care, culture, pests, diseases, propagation and landscape use.

HOR 290 Introduction to Landscape Design 3 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.

HOR 291 Landscape Design Process 3 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, 290; LAT 108, 110, 111. Prerequisite/concurrent: LAT 217

HEALTH AND PHYSICAL EDUCATION

HPE 295 Health and Fitness for Life 3 Explores the role of wellness, physical fitness, stress, nutrition and cardiovascular health in promoting an individual’s health and well being. Fitness testing and fitness lab are included.

HST 103 History of Eastern Civilizations: Middle East 4 Surveys the Middle East from ancient 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.

HST 104 History of Eastern Civilizations: Middle East 4 Surveys the Middle East from ancient 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.

HST 105 History of Eastern Civilizations: India and South Asia Region 4 Surveys history of India and the South Asian region. 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.

HST 106 History of Eastern Civilizations: East Asia 4 Surveys the eastern regions of Asia, specifically China and Japan. Includes political, diplomatic, economic, religious, and cultural themes from pre-history to modern times. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 107 Cultural Assistant Training 15 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.

HST 108 Cultural Assistant Training 15 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.

HST 201 History of the United States - I 4 Studies cause and effect, and significant trends and movements related to political, social and economic ideas and events from Colonial times to 1840. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 202 History of the United States - II 4 Studies cause and effect, and significant trends and movements related to political, social and economic ideas and events from 1840 to 1914. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

HST 203 History of the United States - III 4 Studies cause and effect, and significant trends and movements related to political, social and economic ideas and events from 1914 to present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 204 History of Women in the U.S.: Pre-colonial to 1877 4 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.

HST 205 History of Women in the U.S.: 1877 to Present 4 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.

HST 206 History of Women in the U.S.: 1920 to Present 4 Examines women’s work, family, social reform, and educational experiences in modern America and traces the history of the feminist movement. Explores class, ethnic, racial, and regional variation. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 218 Native American Indian History 4 Explores examples of Indian culture, general history of Indian life during the white occupation of North America and nature and effects of Native American and European American contact and conflict. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 225 History of Women, Sex, and the Family 4 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.

HST 240 Oregon History 4 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.

HST 246 Religion in the United States to 1840 4 Studies basic features of native American religions, European backgrounds of Christianity in the United States, development of different religious groups in America and their impact on American life, and trends and development of religion in the United States in the first half of the 19th century. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 247 Religion in the United States since 1840 4 Covers basic features of native American religions, European backgrounds of Christianity, development of different religious groups in the United States and their impact on American life. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 270 History of Mexico 4 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.

HST 271 History of Central America and the Caribbean 4 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 Presents a framework for understanding the early Black experience in America. Examines Western African societies, the Diaspora, and the development of African American culture from colonial times through the Civil War and the abolition of slavery. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 275 African American History - II 4 Focuses on interpretation of major events in the Black experience from emancipation at the end of the Civil War to the beginning of the civil rights movement at the outbreak of World War II. Examines social, political, economic, artistic and intellectual endeavors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 276 African-American History - III 4 Offers a historical perspective of political, economic, social and cultural development of the Black experience in the United States from 1941 to present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 277 Oregon Trail 4 Examines Euro-American motivations for westward migration; indigenous peoples; predecessors of the route; trail life; impact on humans and environment; diversity in terms of race, class, ethnicity, gender, and religion. Grade: Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 278 Russian History I 4 Helps to build an historical basis to better understand current issues. The main lines of Russian history will be reviewed: the rise of Kiev to the reign of Catherine the Great. Through historical analyses, a critical understanding will be gained of the cultural, social, political, and economic forces that shaped Russian history from the ninth through the eighteenth centuries. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 279 Russian History II 4 The main lines of Russian history will be reviewed from the late eighteenth century to the present. Through historical analysis, a critical understanding will be gained of the cultural, social, political, and economic forces that shaped Russian history from the late eighteenth century to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 280A Cooperative Education: History Offers the chance to extend knowledge of history through work in settings which provide learning experiences supplementing classroom learning. Department permission required.

HST 280B Cooperative Education: History - Seminar 2 Provides a forum in which to discuss work experiences with peers and instructor. Department permission required.

HST 284 History of Africa 4 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 peoples to the global enterprise. Recommended: completion of WR 115 with a C or better grade.

HST 285 The Holocaust 4 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 will be discussed. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

HST 298 Independent Study: History 3 Offers individualized study at an advanced level. Emphasizes areas of history not considered in other courses which meet special interests or program requirements. Complete a term project and readings approved by the instructor. Recommended: Prior study in history. Instructor approval required.
HUM 211 Leadership Development 4 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 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.

HUM 212 History of Furniture-Ancient to 1800 3 Studies and analyzes styles of furnishings from antiquity through the 18th century. Includes contemporary usage as well as the mixing of period furniture styles.

HUM 213 History of Furniture-Antique to 1800 3 Studies and analyzes styles of furnishings from antiquity through the 18th century. Includes contemporary usage as well as the mixing of period furniture styles. Prerequisites: ID 123, WR 115 or placement into WR 121; MTH 20 or placement into MTH 60.

HUM 214 Race and Racism 4 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.

HUM 221 Leadership Development 4 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 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.

ID 122 History of Furniture-Ancient to 1800 3 Studies and analyzes styles of furnishings from antiquity through the 18th century. Includes contemporary usage as well as the mixing of period furniture styles.

ID 123 History of Furniture-1800 to Present 3 Studies and analyzes furnishings from the 19th century to the present. Includes contemporary usage as well as the mixing of period furniture styles. Prerequisites: ID 122; WR 115 or placement into WR 121.

ID 125 Computer Drafting for Interior Designers 3 Introduces AutoCAD software as a design and drafting tool for architecture and interior design. Only one of ID 125, ARCH 126, or DFT 126 can be taken for credit. Prerequisite: ID 131. Prerequisite/concurrent: ID 132.

ID 131 Introduction to Interiors 3 A study of the design elements and principles as applied to interiors. Includes skill development in drawing floor plans, analyzing furniture arrangement, and basic techniques for creating interior design presentation boards including floor plans, color boards, and elevation drawings. Prerequisite/concurrent: ARCH 110.

ID 132 Planning Interiors 3 Covers designing interiors utilizing design and furniture arrangement skills, and developing skills in selection of furniture, floor coverings, wall and window treatments, color, fabric and pattern, lighting and accessories. Prerequisites: (ARCH 126 or ID 125), ARCH 110, ID 131.

ID 133 Space Planning 3 Studies functional and aesthetic design requirements in residential space planning, kitchens and storage spaces. Relates housing aspects to needs of individuals, families, and special groups. Prerequisites: ID 131 or ARCH 201, ARCH 124, and placement into MTH 60 and WR 121. Prerequisite/Concurrent: ARCH 100.

ID 135 Professional Practices for Designers 3 Covers the business aspects of Design. Includes topics on ethics, contracts, licensing, ordering, client-designer relationships, costs, billing and fee structures, and legal considerations. Prerequisites: (ID 132 or ID 133) AND placement into MTH 60.

ID 138 Introduction to Kitchen and Bath Planning 3 Incorporates basic functional and aesthetic design principles for residential kitchen and bath planning, and chronicles the kitchen and bath planning process from conceptual design to construction completion. Prerequisites: ID 131, (ID 125 or ARCH 126 or BCT 105)

ID 225 CAD for Kitchen and Bath Design 3 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. Advances prior knowledge of Kitchen and Bath design skills. Prerequisites: ID 138, ID 125 or ARCH 126 or BCT 105.

ID 230 Textiles for Interiors 3 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.

ID 234 Advanced Interiors 3 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.

ID 236 Lighting Design 3 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.

ID 238 Advanced Kitchen and Bath Planning 3 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 INSP 151) Prerequisite/concurrent: ID 225.

ID 240 Interior Design Internship 3 Supervised and educationally directed internship. Weekly lectures relate on-the-job experiences with academic program. Prerequisites: ID 120, 121, 122, 123, 131, 132, 133, 135, 136, 236; ARCH 101, 111, 124. A “C” grade or better is required in all prerequisites.

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 students spend on job site. Must be coordinated with the supervisor, instructor, and cooperative education specialist. Department permission required.

BUILDING INSPECTION TECHNOLOGY

INS 100 Introduction to Building Inspection Technology 1 Introduction to the Building Inspection Technology (BIT) program. Introduces the code enforcement industry and the Building Inspection Technology course of study. Introduces information on academic expectations, skills and preparedness for success in the BIT program and employment. Introduces resources available on campus.

INS 101 Architectural Graphics 1 2 Introduction to design and drawing for residential design. Includes programming, code/zoning/site analysis, concept diagrams, and design development for plans and elevations.

INS 102 Architectural Graphics 2 2 Introduction to design and drafting for a small commercial project. Includes programming, code/zoning/site analysis, concept diagrams, and design development for plans and elevations.

INS 151 International Residential Code - Structural 4 Covers residential building code as applied to residential construction practices. This course is 40 total contact hours and also worth 80 HSW credits to AIA members. Prerequisites: WR 115 and MTH 20 or higher, or placement into WR 121 and MTH 60 or higher. Prerequisite/concurrent: INS 100.

INS 152 International Residential Code - Mechanical 2 Study of residential mechanical systems code requirements. This course is 20 total contact hours and also worth 40 LU credits to AIA members. Prerequisites: WR 115 and MTH 20 or higher, or placement into WR 121 and MTH 60 or higher. Prerequisite/concurrent: INS 100.

INS 154 Residential Inspection Basics 1 Introduction to processes, procedures, and expectations related to residential inspections. This course is taught in the classroom. Prerequisite/concurrent: INS 151.

INS 201 Plans Exam - Commercial 4 Covers development of procedures in plans examination to determine code compliance of building permit applications. Includes blueprint reading and code administration. Emphasis is placed on presenting plan review processes and procedures for the student with limited construction background. This course is 40 total contact hours and also worth 60 LU credits to AIA members. Prerequisite: ARCH 162, INS 252, MTH 60 or higher or placement into MTH 65 or higher.

INS 202 Plans Exam - Residential 4 Covers development of procedures in residential plan examination to determine code compliance of building permit applications.
INSP 252 and INSP 201. Availability, and fire protection systems. Prerequisites: INSP 251.

INSP 218 Fire Sprinkler Plan Review Basics 2 Introduction to plan review of building fire sprinkler systems. Prerequisite: INSP 251.

INSP 220 Fire and Life Safety 3 Addresses Fire and Life Safety requirements in the International Fire and Building codes including building occupancies, exit systems, hazardous materials regulations, site access, water availability, and fire protection systems. Prerequisites: INSP 252 and INSP 201.

INSP 251 International Building Code I 4 Covers nonstructural regulations of the International Building Code, including administration, occupancy classification, building area, height and location limits, type of construction, interior environments and fire resistant standards for small commercial buildings including multi story structures. Emphasis is placed on presenting basic code and building element concepts for the student with limited construction background. This is a 40 total contact hours and is also worth 60 HSW credits to AIA members. Prerequisites: WR 115 and MTH 20 or higher, or placement into WR 121 and MTH 60 or higher.


INSP 253 International Building Code III 3 Introduces the loading parameters for structural engineering in the International Building Code chapters that apply to Small Commercial Structures of three stories and less. Also covers glazing, temporary structures and prefabrication construction. This course is worth 60 HSW credits to AIA members. Prerequisites: WR 115 and MTH 20 or higher, or placement into WR 121 and MTH 60 or higher.

INSP 255 International Mechanical Code I 2 Study of the International Mechanical Code regulations for permitting, general requirements, exhaust systems including kitchen hoods and duct systems. Prerequisite: WR 115 and MTH 20 or higher, or placement into WR 121 and MTH 60 or higher. Prerequisite/concurrent: INSP 100.

INSP 256 International Mechanical Code II 2 Study of the International Mechanical Code including combustion air, chimneys and vents, refrigeration, and specific appliances/systems. Prerequisite: INSP 255.

INSP 257 International Fuel-Gas Code 3 Studies the International Mechanical Code including new code requirements, application of code to inspections, and methods used to inspect mechanical installations. This course worth 60 LU credits to AIA members. Prerequisite: WR 115 and MTH 20 or higher, or placement into WR 121 and MTH 60 or higher. Prerequisite/concurrent: INSP 100.


INSP 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 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.

SIGN LANGUAGE INTERPRETATION

ITP 111 American Sign Language I 5 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 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 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 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 Continues work of ITP 120. Emphasizes increased fingerspelling skill by incorporation into the context of ASL conversation in depth. Admission into Sign Language Interpretation program required. Prerequisite: ITP 120.

ITP 131 Deaf Culture 4 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 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 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 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 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 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 261 Interpreting Theory II: K-12 Education 3 Explores the role and functions 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 262 Interpreting Theory III 4 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. Focuses on ASL and English to ASL. Admission to the Sign Language Interpretation Program or department permission required. Prerequisites: ITP 270.

ITP 270 Interpreting Process I 4 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 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 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 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 prac-
Course Descriptions

ITP 274 Interpreting Process V 6 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 276 Specialized Discourse I 3 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 discusses in ASL. Admission into Sign Language Interpretation Program and department permission required.

ITP 277 Specialized Discourse II 3 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 into Sign Language Interpretation Program and department permission required.

ITP 279 Mock Interpreting I 1 Works with team interpreters to interpret live presenters in class. Applies text analysis to prepare content. Prerequisite: ITP 270. Corequisite: ITP 272.

ITP 281 Mock Interpreting II 2 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 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 ongoing feedback from professional interpreters acting as mentors. Passing the qualifying exam the term prior to enrollment is required.

ITP 284 Interpreting Internship II 3 Applies interpreting skills in educational settings to gain practical experience assuming the role of an educational interpreter in a structured setting with ongoing 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 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 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.

J 103 Introduction to Media Writing 4 Introduces the basic process and practice of writing media. Discusses style and story 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.

J 201 Mass Media and Society 4 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.

J 204 Visual Communication for the Media 4 Theory and application of visual communication in newspapers, magazines, television news, advertising, and public relations. May include a Service Learning component. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

JPN 101 First Year Japanese 5 Emphasizes the spoken language of Japanese. Skills of listening, speaking, reading, and writing are developed with emphasis on active use of these skills. Hiragana and Katakana syllabaries are introduced. Information is offered to help gain cultural awareness and appreciation. For beginners.

JPN 102 First Year Japanese 5 Expands communicative use of Japanese and cultural awareness. Practice of Hiragana and Katakana syllabaries continued. Kanji characters are introduced. Communicative proficiency is the main objective of the sequence. Recommended: Completion of JPN 101 or instructor permission.

JPN 103 First Year Japanese 5 Expands further the communicative use of Japanese and cultural awareness. The practice of Hiragana and Katakana syllabaries, and Kanji characters are continued. Communicative proficiency is the main objective of the sequence. Recommended: Completion of JPN 102 or two and a half to three years high school Japanese.

JPN 111A First Year Japanese Conversation 3 Offers a review of and additional practice with structures and vocabulary presented in JPN 101. For beginners.

JPN 111B First Year Japanese Conversation 2 Provides extended practice for better understanding of the materials presented in JPN 150. Recommended: Concurrent enrollment in JPN 150 or instructor permission.

JPN 111C First Year Japanese Conversation 1 Provides extended practice for better understanding of the materials presented in JPN 102. Recommended: Completion of JPN 101 or instructor permission.

JPN 112A First Year Japanese Conversation 3 Offers a review of and additional practice with structures and vocabulary presented in JPN 102. Recommended: Completion of JPN 101 or instructor permission.

JPN 112B First Year Japanese Conversation 2 Provides extended practice for better understanding of the materials presented in JPN 151. Recommended: Concurrent enrollment in JPN 151 or instructor permission.

JPN 112C First Year Japanese Conversation 1 Provides extended practice for better understanding of the materials presented in JPN 102. Recommended: Completion of JPN 101 or instructor permission.

JPN 113A First Year Japanese Conversation 3 Offers a review of and additional practice with structures and vocabulary presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission.

JPN 113B First Year Japanese Conversation 2 Provides extended practice for better understanding of the materials presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission.

JPN 113C First Year Japanese Conversation 1 Provides extended practice for better understanding of the materials presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission.

JPN 150 First Year Japanese 6 Emphasizes the spoken language of Japanese. Skills of listening, speaking, reading, and writing are developed with emphasis on active use of these skills. Hiragana and Katakana syllabaries are introduced. Offers to enhance cultural awareness and appreciation. For beginners. Recommended: Concurrent enrollment in JPN 111B.

JPN 151 First Year Japanese 6 Continuation of JPN 150. Expands the communicative use of Japanese and cultural awareness. Practice of Hiragana and Katakana syllabaries are continued. Kanji characters are introduced. Recommended: Completion of JPN 150 or instructor permission and concurrent enrollment in JPN 112B.

JPN 201 Second Year Japanese 5 Development of the four skills of listening, speaking, reading, and writing is continued. Kanji characters are further explored. Offers to expand cultural awareness and appreciation. Recommended: Completion of first year Japanese at the college level, or three years high school Japanese, or instructor permission.

JPN 202 Second Year Japanese 5 Continues work begun in JPN 201, expanding the communicative use of Japanese and cultural awareness. Study of Kanji characters is further explored. Recommended: Completion of JPN 201 or instructor permission.

JPN 203 Second Year Japanese 5 Continues work begun in JPN 201 and 202, expanding further the communicative use of Japanese and cultural awareness. Kanji characters are further explored. Recommended: Completion of JPN 202 or instructor permission.

JPN 211A Intermediate Japanese Conversation 3 Offers a review of and additional practice with structures and vocabulary presented in JPN 201. Recommended: Completion of first year Japanese at the college level, or three years of high school Japanese, or in-
JPN 211B Intermediate Japanese Conversation 2 Designed to provide extended practice for better understanding of the materials presented in JPN 201. Recommended: Completion of JPN 103 or JPN 151, or concurrent enrollment in JPN 250 or instructor permission.

JPN 211C Intermediate Japanese Conversation 1 Designed to provide extended practice for better understanding of the materials presented in JPN 201. Recommended: Completion of first year Japanese at the college level, or three years of high school Japanese or instructor permission.

JPN 212A Intermediate Japanese Conversation 3 Offers a review of and additional practice with structures and vocabulary presented in JPN 202. Recommended: Completion of JPN 201 or instructor permission.

JPN 212B Intermediate Japanese Conversation 2 Designed to provide extended practice for better understanding of the materials presented in JPN 202. Recommended: Completion of JPN 201 or JPN 250 or concurrent enrollment in JPN 251 or instructor permission.

JPN 212C Intermediate Japanese Conversation 1 Designed to provide extended practice for better understanding of the materials presented in JPN 202. Recommended: Completion of JPN 201 or JPN 250 or instructor permission.

JPN 213A Intermediate Japanese Conversation 3 Offers a review of and additional practice with structures and vocabulary presented in JPN 203. Recommended: Completion of JPN 202 or instructor permission.

JPN 213B Intermediate Japanese Conversation 2 Designed to provide extended practice for better understanding of the materials presented in JPN 203. Recommended: Completion of JPN 202 or instructor permission.

JPN 213C Intermediate Japanese Conversation 1 Designed to provide extended practice for better understanding of the materials presented in JPN 203. Recommended: Completion of JPN 202 or instructor permission.

JPN 250 Second Year Japanese 6 Emphasizes the spoken language of Japanese. Skills of listening, speaking, reading, and writing are continued. Kanji characters are further explored. Offers to expand cultural awareness and appreciation. Recommended: Completion of first year Japanese at the college level or three years of Japanese in high school or instructor permission or concurrent enrollment in JPN 211B.

JPN 251 Second Year Japanese 6 Continues work begun in JPN 250, expanding the communicative use of Japanese and cultural awareness. Kanji characters are further explored. Recommended: Completion of JPN 250 or equivalent, or concurrent enrollment in JPN 212B.

JPN 260A Japanese Culture 3 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 families, social roles, friendship, WWII, traditions and pop culture, morality, philosophies, economics. Course conducted in English. Japanese films will be subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

JPN 260B Japanese Culture 2 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 families, social roles, friendship, WWII, traditions and pop culture, morality, philosophies, economics. Course conducted in English. Japanese films will be subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

JPN 260C Japanese Culture 1 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.

JPN 261A Japanese Culture 3 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 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. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

JPN 261B Japanese Culture 2 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. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

JPN 261C Japanese Culture 1 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.

JPN 262A Japanese Culture 3 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, workforce and religions. Course conducted in English. Japanese films will be subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

JPN 262B Japanese Culture 2 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, workforce and religions. Course conducted in English. Japanese films will be subtitled in English.
Course Descriptions

LAT 111 Landscape Construction Practices 3
Basic materials, safety, equipment and techniques used in the construction of landscapes. Basic tool and hardware identification and use in fences, decks, landscapes, planters and retaining walls. Hands-on projects in wood, concrete, stone, and modular pavers.

LAT 214 Plant Composition I 3
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.

LAT 217 Landscape Drafting 3
Basic drafting skills and layout techniques to produce quality design drawings. Drafting equipment, linewidth, lettering and drafting shortcuts. Prerequisite: HOR 290.

LAT 219 Landscape Illustration 3
Basic principles of graphic presentation for landscape design. Produce perspectives, isometric drawing, botanical drawings and plan renderings.

LAT 223 Site Surveying and Analysis 3
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.

LAT 225 Water Gardens 2
Layout and construction of water features. Hands-on techniques for site development, use of liners, placement of rock and plants, pumps and plumbing. Selection of water plants and fish.

LAT 232 Landscape Irrigation I 4
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.

LAT 235 Tree Care-Fall 3
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.

LAT 236 Landscape Math 3
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.

LAT 240 Tree Care-Spring 3
Principles and practices of modern arboriculture (tree care). Plant growth regulators, fertilization, tree appraisals, construction protection, hazard tree management and pruning.

LAT 241 Turfgrass Cultural Practices 3
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.

LAT 243 Landscape Business Operations 3
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.

LAT 250 Plant Diseases, Insects and Weed Identification 3
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.

LAT 262 Native Plants of Oregon 3
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.

LAT 264 Landscape Estimating and Bidding 3
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, record-keeping, and computer use. Prerequisites: LAT 236, LAT 108, 110, 111, or department permission.

LAT 271 Computer Aided Landscape Design 3
Site designer software and its use in landscape design. Computer aided design (CAD) techniques needed to produce finished landscape designs, plant lists, and reports. Prerequisite: LAT 217.

LAT 272 Sustainable Landscaping 3
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 at new approaches to landscaping. Recommended: WR 115.

LAT 275 Introduction to Landscape Night Lighting 3
Introduction to landscape low voltage night lighting. Topics covered include electricity fundamentals, layout, bulbs and fixtures, transformers, wire sizing and connections, and lighting design. Students will install a night lighting system.

LAT 278 Oregon LCP Exam Preparation 3
Presents an overview of the requirements and procedures for getting an Oregon Landscape Construction Professional license and Business license. Intended as a brief review of the topics covered in the exam and will highlight helpful strategies for successfully passing the exam. Prerequisites: CSS 200, HOR 226, 227, 228, 290, LAT 108, 110, 111, and 236 or two years of landscape industry experience and instructor permission.

LAT 280A Cooperative Education: Landscape 3
Actual work experience at approved job sites or on Rock Creek grounds. Department permission required.

LAT 280B Cooperative Work Experience-Landscape Seminar 1
This online seminar complements a Cooperative Education work experience. Students must have a designated worksite and be concurrently enrolled in LAT 280A. Department permission required.

LAT 280C Cooperative Work Experience-Landscape Design 3
Actual landscape design work experience for approved clients utilizing a required set of learning outcomes. Department permission required.

LIB 101 Library Research and Beyond: Find, Select and Cite 1
Provides an overview of the research process, and helps students build essential research skills. Students will identify their research topic, plan and carry out their research process, and identify and cite preferred sources of credible information on their topics.
erancing 3.5 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.

MCH 120 Machine Shop Math 2 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.

MCH 121 Manufacturing Processes I 4 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.

MCH 123 Sheet Metal Fabrication 4 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.

MCH 125 Speeds and Feeds 1 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.

MCH 130 Machine Shop Trigonometry 2.5 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.

MCH 135 Basic Measuring Tools 1.5 Covers use and applications associated with basic measuring tools including: the machinist's scale, dividers, telescoping gage, combination square, hemophrodite caliper, surface gage, surface finish gage. Introduces the proper techniques and applications of the basic transfer measurement and comparison tools in measuring holes accurately, scribining 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.

MCH 145 Layout Tools 1.5 Covers instruction and practice in cutting, filing, layout, scribining, use of gage blocks, and utilizing the height gage to accurately layout lines, angles and the location of part features. Introduces the proper use and applications of the hacksaw, scriber, dividers, prick punch, ballpeen hammer, combination square set, and height gage to produce the accurate layout of part features. Prerequisite: MCH 100.

MCH 150 Precision Measuring Tools 1.5 Covers instruction and practice of precision measurement with 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.

MCH 151 Metrology 2 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 verification techniques. Prerequisite: MCH 150.

MCH 157 Project Machine Technology I 1.5 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 158 Project Machine Technology II 3 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 159 Project Machine Technology III 4.5 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 160 Drilling Machines and Operations 2 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. Prerequisites: MCH 100, 125, 135.

MCH 175 Band Saws 1 Covers setup, applications, parts and operation of the various types of 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.

MCH 180 Turning Machines and Operations 4 Covers setup, applications, parts and operation of the various types of lathes. Introduces the commonly performed operations of drilling, reaming, counterboring, countersinking, spotfacing and tapping on the various types of drilling machines used to produce part features to print specifications. Prerequisites: MCH 100, 125, 135.

MCH 190 Boring on the Lathe 1 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 part features to print specifications. Prerequisites: MCH 100, 125, 180.

MCH 195 Threading on the Lathe 3 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.
205 Vertical Milling Machines and Operations 3.5 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, finding 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.

MCH 210 Project Machine Technology IV 6 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 211 Project Machine Technology V 75 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 212 Project Machine Technology VI 9 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 213 Project Machine Technology VII 10.5 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 214 Project Machine Technology VIII 12 Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings.

MCH 215 Horizontal Milling Machines 2.5 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.

MCH 216 Mechanical Inspector 4 Introduces measurement by mechanical, electronic, and optical methods related to industrial dimensional conformance requirements. Drawing and part compliance methods, including geometric dimensioning verification techniques.


MCH 220 Manufacturing Processes II 4 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.

MCH 221 Gears 2 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 technician 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.

MCH 222 Coordinate Measuring Machine Operation 2 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.

MCH 225 Surface Grinding Machines and Operations 2 Covers the setup, applications and operation of the horizontal spindle/reciprocating table surface grinder to produce parts to extremely close tolerances with improved surface finishes and accuracy. Introduces automatic grinder operation by grinding a block square/parallel and perpendicular by applying the required setups and operational sequencing, and grinding of angular surfaces on a workpiece to print specifications. Also introduces grinding wheels and abrasives, selecting, balancing and mounting the grinding wheel and the machines/machines of surface grinding. Prerequisite: MCH 100.

MCH 227 CNC Grinder Operation 2.5 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 226.

MCH 228 Abrasives 1.5 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.

MCH 229 Rapid Prototyping 5 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.

MCH 235 Tool Sharpening 2 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 forms of relieved cutters, reamers and taps to manufacturers specifications. Prerequisite: MCH 100.

MCH 240 Cutting Tool Technology 2 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.

MCH 245 Metallurgy 2.5 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.

MCH 246 Metallurgy II 4 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.

MCH 247 Manufacturing Processes III 3 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.

MCH 248 Metallurgy III 4 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.

MCH 259 CNC Programming-Lathe 5 Introduces the basic programming skills used with Fanuc (G&M compatible) controlled CNC turning centers. Prerequisites: MCH 100, 110, 125, 130, 160, 205.

MCH 262 CNC Conversational Controls 2 Covers basics of CNC Conversational Controls. Introduces the student to CNC conversational controls and the flow of CNC conversational programming. Prerequisite: MCH 260, 261.

MCH 263 CNC Cycle Time Reduction 1.5 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.

MCH 266 Advanced CNC Programming 3.5 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.

MCH 268 CNC Programming-Mill 5 Introduces basic programming skills used with Fanuc (G&M compatible) controlled CNC machining centers. Prerequisites: MCH 100, 110, 125, 130, 160, 205.

MCH 272 Mastercam Level I 5 Introduces per-
sonal computing and Mastercam operational basics. Includes terminology relevant to PC-based CAD/CAM work. Covers hardware familiarity, system operation, folders, file types and structure, Mastercam menu structure and system management, and 2 1/2 axis toolpaths for milling. Emphasis on proper geometry creation, manipulation and management, relevant utilities and C-hooks, terminology, toolbar and menu functions.

MCH 273 Mastercam Level II 5 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.

MCH 276 Mastercam Solids 3 A continuation of the CAD/CAM curriculum and explores the solids application of Mastercam as it pertains to model design and toolpath generation.

MCH 277 Mastercam CNC/CAM Project 3 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.

MCH 278 CNC Operation - Mill 4 Introduces basic operation and setup skill used with Fanuc (G&M compatible) controlled CNC machining centers. Prerequisite: MCH 268.

MCH 279 CNC Operation - Lathe 4 Introduces basic operation and setup skill used with Fanuc (G&M compatible) controlled CNC turning centers. Prerequisite: MCH 259.

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.

MCH 282 CNC Router Operation 3 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.

MCH 283 CNC Router Mastercam Programming 3 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.

MCH 284 Computer Aided Manufacturing 3 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.


MCH 288 Certified Manufacturing Technologist Review 4 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 Technician (CMfgT). Prerequisite: Industrial experience and/or manufacturing enterprises/engineering technology coursework required.

MCH 289 Certified Manufacturing Engineer Review 4 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 (CMfgE) with emphasis in Processes.

MEDICAL LABORATORY TECHNOLOGY

MLT 100 Medical Office Laboratory Orientation 3 Introduces clinical laboratory principles and procedures commonly performed in the small office setting, including specimen collection and handling, urinalysis, basic hematology, serology, microbiology and quality control. Prerequisites: MP 111, BI 55 or BI 122 or BI 233.

MLT 111 Medical Technology I 4 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.

MLT 112 Medical Technology II 4 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.

MLT 113 Introduction to Medical Microbiology 4 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.

MLT 150 Lab Assistant - Phlebotomy Practiceum 7 Receive training in a clinical laboratory to learn basic laboratory assisting skills. Introduces specimen processing, phlebotomy and information systems. Stresses professionalism, interpersonal skills and safety.
Course Descriptions

MLT 242 Immunohematology II 4 Presents blood group systems other than ABO and Rh, testing methods, Hemolytic Disease of the Newborn, donor selection, blood components, anticoagulants, and transfusion reactions. The principles involved in various serologic tests will also be discussed. Prerequisites: Acceptance into second year of MLT Program.

MLT 250 Hematology 4 This course reviews and further develops knowledge and skills in the areas of hemoglobin, hematocrit, blood cell counts and blood cell morphology. Presents abnormalities, anomalies and conditions affecting red blood cells and white blood cells. Prerequisite: Acceptance into the second year of the MLT Program.

MLT 261 Bacteriology I 4 Incorporates basic principles and practices of clinical bacteriology focusing on the following families: Micrococccaceae, Streptococcaceae and Neisseriaceae. The principles of molecular diagnostic testing will also be introduced. Prerequisite: Acceptance into the second year of the MLT Program.

MLT 262 Bacteriology II 3 Incorporates basic practices and principles of general bacteriology with clinical bacteriological practices focusing on the Enterobacteriaceae, non-fermentative gram negative rods, Bacteroidaceae, cocacobacilli, aerobic and anaerobic spore-formers, and Mycobacteria. Prerequisite: Acceptance into second year of MLT Program required.

MLT 263 Medical Parasitology 3 The course provides an introduction to the field of medical parasitology. Identifying characteristics, life cycles, pathogenicity and testing methods for various relevant organisms are covered. Prerequisites: Acceptance into second year of MLT Program required.

MLT 264 Medical Mycology 3 Studies medically important fungi and procedures for the collection, handling, preparation and use of media. Includes methods introduction to diagnostic procedures for the cultivation and identification of pathogenic fungi. Prerequisite: Acceptance into the second year of the MLT Program.

MLT 271 Clinical Laboratory Practice I 3 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.

MLT 272 Clinical Laboratory Practice II 3 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.

MLT 273 Clinical Laboratory Practice III 3 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.

MLT 274 Clinical Laboratory Practice IV 8 Students are assigned to various clinical laboratories to become familiar with 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.

MLT 281 Clinical Seminar 4 This course introduces new concepts in the clinical laboratory including laboratory management; state and federal regulations such as HIPPA, CLIA, and Medicare; point of care testing, and the prevention of laboratory errors. Other topics include clinical virology, tumor markers, and heavy metals. Students are also prepared for certification examinations. Prerequisite: Acceptance into the second year of the MLT Program.

MULTIMEDIA

MM 110 Introduction to Multimedia 1 Explores the different job areas within multimedia field. Roles of the multimedia team are examined and explained. Create a basic multimedia project using entry level multimedia industry standard authoring software; and the first portion of a multimedia portfolio targeted to job acquisition. Completion of CAS 111D highly recommended.

MM 120 Multimedia Design 2 Introduces multimedia development and design process. Includes developing multimedia team and identifying the job titles, functions and skills; designing a multimedia project, identifying target audience, project budget and development time lines, applying instructional design guidelines to a multimedia project, developing multimedia portfolios. Prerequisites: Previous or concurrent: MM 110, or instructor permission.

MM 130 Multimedia Graphic Video and Audio Production 3 Introduces graphics, text, audio, and video development for multimedia. Students produce multimedia elements using a variety of tools, such as digital still and video cameras, analog video cameras, scanners, and the internet. Graphic, video and audio editing software, such as Adobe Photoshop(TM) and Apple Final Cut Pro(TM) are introduced. Prerequisites: Previous or concurrent: MM 120, or instructor permission.

MM 140 Multimedia Authoring 1 3 Introduction to producing a usable multimedia project that incorporates the principles and practices from MM 110, MM 120 and MM 130. Students develop an interactive multimedia project incorporating graphics, text, video, and audio, using multimedia industry standard authoring software (Macromedia Director(TM)). The cross platform project may be used on PCs (Windows) and Macintosh computers and the World Wide Web. Additional lab time required. Prerequisites: MM 130 (previous or concurrent) or instructor permission.

MM 141 Incorporating Multimedia Elements in Presentation Software 2 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.

MM 150 Multimedia Project Review, Testing and Delivery 1 Introduction to finalizing the multimedia project through quality assurance, beta testing and group evaluation. Technical support, product documentation, final production and packaging will be addressed. The strengths and weaknesses of various delivery options will be reviewed. The authoring project developed in Multimedia 140 will be the project used for this class. Prerequisite: Previous or concurrent: MM 140, or instructor permission.

MM 160 Marketing Yourself as a Multimedia Professional 2 Develop a marketing plan that will lead to employment in the multimedia field. Describe the primary features of guerrilla marketing. Create professional quality promotional materials. Managing the production of a multimedia project including project planning, production scheduling and management, cost estimating, resource management, proposing, marketing/advertising, copyright issues and contract development strategies. Prerequisites: Previous or concurrent: MM 130 and MM 140 or instructor permission.

MM 220 Multimedia Design II 3 Emphasizes design concepts including layout, typography, color theory, and information architecture with the goal of creating interactive designs that balance aesthetics and function. Develops a working knowledge of interface design using standard drawing programs such as Macromedia Freehand, which translate created designs seamlessly into other software tools such as Adobe Photoshop, Macromedia Flash and Dreamweaver. Students participate in “real-world”, client focused, collaborative team design projects, which include assigned positions, such as project manager, account manager, creative director, art director, copywriter, and programmer. Students will critique work and post projects to the department web site as directed. Prerequisites: MM 120, 130; CAS 111D, 175; or instructor permission.

MM 230 Graphics for Multimedia 4 Using multimedia industry standard graphic software such as Adobe Photoshop(TM), Macromedia Flash(TM) and Adobe Illustrator(TM) to create and adapt graphic images for use in multimedia and interactive computer applications. Create customized color palettes for improved display. Color correct, select appropriate file formats (JPEG, GIF, TIFF, PICT & EPS), resize and combine multiple graphics for use in multimedia presentations and multimedia web page graphics. Prerequisite: MM 130 or instructor permission.

MM 231 Vector Graphics & Animation for the World Wide Web 3 Create navigation controls, animated logos, long-form animations with synchronized sounds using multimedia industry standard vector graphics and animations software (Macromedia Flash(TM)). Create translucent and transparent vector objects for use with multimedia applications. Optimize Flash(TM) movies for various playback bandwidths. Prerequisites: MM 130, 140; CAS 111D, 175; or instructor permission.

MM 232 Multimedia 3D Modeling and Animation 3 Create, edit, and take apart 3D models and...
Course Descriptions

4 Introduction to the creation of custom DVD-Video using professional level authoring software, such as Apple DVD Studio Pro. Digital video created in MM 235, and/or from other sources will be integrated with audio, graphics, and other assets. Custom navigation, menus, chapters, and interactivity will be developed. Encode uncompressed audio into highly compressed Dolby digital AC-3 streams, and incorporate into the DVD authoring software for full 5.1-channel surround sound. Final DVD projects are intended for use in standard home entertainment DVD players. Prerequisite: MM 140 and MM 235, or instructor permission.

MM 240 Multimedia Authoring II-Scripting 4 Using multimedia industry standard authoring programs (such as Macromedia Director and Flash) to develop interactive projects. Focuses on interactive design of the project and the applications’ underlying scripting languages (e.g., Lingo and ActionScript). Previously developed multimedia elements will be assembled, made interactive through the use of scripting techniques, and then tested for function, design, usability, and distribution. Final cross-platform projects may be delivered via the WWW, CD, or DVD. Essential scripting concepts and practices will be covered. No prior programming skills are required. Prerequisites: MM 140, 231, or instructor permission.

MM 241 Multimedia Authoring III - Scripting 4 Extends scripting skills acquired in MM 240, enabling students to build more sophisticated interactive projects that may include: synchronized audio, complex data structures (arrays), and user tracking (such as score keeping). Focuses on how scripting enhances usable interfaces to provide the best user experience. Identifies solutions to production obstacles, and negotiates solutions to design problems to meet project goals. Concentrates on applying gained knowledge and skills to larger projects. Students may use multimedia authoring applications such as Macromedia Director or Flash and their corresponding scripting languages (e.g., Lingo and ActionScript) for their projects, but the scripting skills acquired may be applicable to other application environments as well. Prerequisite: MM 240; or instructor permission.

MM 244 Creating Interactive Web Pages 3 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.

MM 245 Internet Delivery Methods 3 Focuses on methods used to optimize and deliver still graphics, animations, audio, and video streaming and website design. Students will use still image optimization programs such as Adobe Image Ready and streaming media compression tools such as Apple QuickTime and QuickTime Streaming Server Using HTML editors such as Macromedia Dreamweaver, students will address special user interface design challenges encountered in bandwidth intensive web sites using Cascading Style Sheets, JavaScript, and XML. Streaming media will be delivered via the World Wide Web and Apple Quicktime Streaming Server. Students will also evaluate media streaming performance, codec efficiency, image quality and cross platform functionality, interactivity, accessibility, and web design standards. Recommended: CAS 112D, 113, & 206. Prerequisites: MM 230 & CAS 111D or Instructor Permission.

MM 250 Advanced Multimedia Project Development I 3 Designed to allow the student to combine their creative and technical skills developed in the preceding 100 and 200 level Multimedia classes through the production of a consummate project. 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. Prerequisites: MM 230, 231, 235, 236, 240, 241, 245; or instructor permission.

MM 251 Advanced Multimedia Project Development II 3 Further develops the project created in MM 250. 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 250 or instructor permission.

MM 252 Advanced Multimedia Project Development III 3 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.

MM 260 Video Production I 4 Introduction to digital video production, with a focus on the fundamentals of project planning, basic camera functions, shooting techniques, lighting principles, and audio recording fundamentals. Pre-production issues, production terminology, and industry etiquette are also discussed, studied, and evaluated. Prerequisite: MM 130.

MM 261 Video Production II 4 Intermediate level of digital video production, continues with digital video production and nonlinear editing and incorporates field audio recording, audio editing, and shooting and preparing video for multiple distribution methods. Prerequisite: MM 260.

MM 262 Video Production III 4 Explores documentary video making through hands-on exercises and assignments. Covers relevant preproduction methods and materials, the small-crew field production model and editing concepts and strategies. Prerequisites: MM 235, MM 260, or instructor's permission.

MM 270 Writing for Multimedia 3 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 permis-
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.

MEDICAL PROFESSIONS

MP 109 Basic Medical Terminology 2 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.

MP 110 Basic Medical Terminology II 2 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.

MP 111 Medical Terminology 4 Covers prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms. Course taught by body systems. English communication skills necessary.

MAGNETIC RESONANCE IMAGING

MRI 101 MRI Physics I - Principles, Equipment & Safety 2 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 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 required. Prerequisite: MRI 101.

MRI 111 MRI Cross-Sectional Anatomy I 2 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 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 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, MRI 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 122 MRI Clinical Education II 8 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, MRI 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 121.

MRI 123 MRI Clinical Education III 8 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 122.

MRI 130 MRI Imaging Procedures and Diagnosis 2 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 Provides a comprehensive review of patient care, imaging procedures, data acquisition and processing and physical principles of image formation for magnetic resonance imaging. Department permission required. Prerequisites: MRI 102, 112, and MRI 122.

MANAGEMENT/SUPERVISORY DEVELOPMENT

MSD 101 Principles of Management and Supervision 3 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.

MSD 105 Interpersonal Communication 3 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.

MSD 107 Organizations & People 3 This course is about 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.

MSD 110 Gender Conflict Resolution 1 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.

MSD 111 Corresponding Effectively At Work 3 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.

MSD 113 Influence Without Authority 1 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.

MSD 115 Improving Work Relations 3 Discusses management techniques, methods and strategies for helping managers, aspiring managers and staff professionals step out from the “crowd of look-alikes.” Topics include improving individual effectiveness, developing interpersonal relationships, functions of work groups, multi-cultural relations, productivity and quality at the organizational level.

MSD 116 Creative Thinking for Innovative Change 1 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.

MSD 117 Customer Relations 3 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.

MSD 119A Intercultural Communication 1 Identifies sources of common cultural misunderstandings. Helps solve basic interpersonal challenges through discussion, video, and practice. Gives resources to improve relationships.

MSD 121 Leadership Skill Development 3
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.

MSD 122 Motivation Without Manipulation 1 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.

MSD 123 Job Search Strategies 1 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.

MSD 128 Crisis Intervention: Handling the Difficult Person 1 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.

MSD 130 Creative Problem Solving 3 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.

MSD 133 Brave New Workplace: Strategies to Excel in World of Change 1 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!

MSD 134 Who Moved My Cheese 1 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.

MSD 140 Management Workshops 1 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.

MSD 148 Asserting Yourself in the Workplace 1 This workshop looks at three typical types of human behavior and focus on assertiveness. Particular attention given to creating appropriate situations for assertive behavior to occur and opportunities for skill practice also provided.

MSD 150 Listening Skills 1 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.

MSD 151 Dealing with Difficult People 1 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.

MSD 157 Conflict Management 1 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 “co-operative conflict,” dealing with anger, and prevention ideas.

MSD 159 Stress Control 1 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.

MSD 160A Communication Styles 1 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.

MSD 161 Customer Relations 1 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.

MSD 162 Coping with Angry Feelings and Angry People 1 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-provoking situations; and converting angry feelings into positive action.

MSD 164 Better Memos and Letters 1 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.

MSD 174 Time Management 1 This 10-hour workshop focuses on learning how to evaluate time usage to make it more effective and more efficient. 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.

MSD 174B Leadership & Effective Decision Making 1 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.

MSD 175B Direct Communication in the Workplace 1 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.

MSD 176 Nonverbal Communication 1 This 10-hour workshop discusses the impact non-verbal communication has on understanding the message. Topics include body language, eye contact, attire, and manner of presentation and cultural differences.

MSD 176A Interpersonal Communication 1 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.

MSD 177 Team Building 1 Discusses what team building is, why it is important, how to start it, how to manage the team building process, 12 components of generating team building development, and some selected tools for team building.

MSD 177B Coaching Great Performance 1 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.

MSD 179B Avoid Burnout: Build Resilience 1 Examines 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.

MSD 180A Goal Setting and Productivity 1 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.

MSD 187 Humor in the Workplace 1 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.

MSD 188B Self Management for Success 1 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.

MSD 192A Project Management 1 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.
MSD 193 Self Esteem the Key to Success
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.

MSD 193A Leadership Skill Development 1
Leadership is an essential part of running a quality organization. Learn about the various facets that define leadership today.

MSD 194 Effective Presentation Skills 1
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.

MSD 198A Male/Female Communication Style Differences 1
Understanding the other’s way of talking is a giant leap across the communication gap between women and men and a giant step toward opening lines of communication.

MSD 198B Exploring 7 Habits of Highly Effective People 1
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.

MSD 200 Organizations and Social Responsibility 3
Clarifies managerial/supervisory attitudes about the relationships between business and government, the anti-discriminatory and open work environment, current environmental issues such as pollution and energy, the consumer movement, and workplace ethics.

MSD 202 Training the Employee 3
Develops practical perspective of training as an organizational resource. Includes ways people learn, identifying employee training development requirements, developing objectives, designing lesson plans, evaluation criteria, developing strategy, alternatives to training, and practicum.

MSD 206 The Troubled Employee 3
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.

MSD 216 Budgeting for Managers 3
Covers budgeting vocabulary, finance principles, record keeping techniques, cash management, cash budgeting and capital budgeting. Recommended: Work-related budgeting experience.

MSD 222 Human Resource Management: Personnel 3
Covers personnel operations, human resource planning, job design and job analysis, recruitment and equal employment opportunity, and job selection and placement.

MSD 223 Human Resource Management: Performance and Compensation 3
Covers performance appraisal, indirect compensation programs, improving productivity and quality of work life, employee rights and collective bargaining.

MSD 279 Project Management - Intro 4
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.

MSD 280A Coop.Ed.: Management and Supervisory Development 3
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.

MSD 280B Coop.Ed.: Management and Supervisory Development-Seminar 1
Designed as a one credit hour 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.

MSD 289 Trends in Management and Supervision 1
Examines specific topics of current interest not necessarily covered in other Management/Supervisory Development classes but related to the changing management field. Investigates different topics emerging 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.

MT 70 Vacuum Technology Practice 0.5
Customizable survey course in the theory and practice of vacuum as used in semiconductor manufacturing. Includes vacuum principles, vacuum pumps, gauges and components, and leak detection.

MT 80 Safety and Cleanroom Protocol 2
Covers safety considerations for working in a semiconductor industry cleanroom. Introduces safety programs in the industry. Overviews available hazard information about the importance of quality and contamination control emphasis in the industry.

MT 100 Introduction to Microelectronics and Nano Technology 3
Covers the processes and equipment used to create devices on the micro and nano scale. Emerging applications of MEMS and Nanotechnology are discussed. Prerequisite: MTH 65.

MT 122 Digital Systems I 3
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.

MT 200 Foundations of Microelectronics Technology 3
Presents an overview of careers in the microelectronics technology field. 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.

MT 202 Training the Employee 3
Covers commonly made semiconductor devices, including diodes, solar voltaic cells, and MOSFET transistors. Includes electronic materials fundamentals of electricity, conductivity and semiconductivity.

MT 203 Introduction to Micro and Nano Processing 1
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.

MT 204 Introduction to Solar Voltic Processing 1
Introduces the methods used to manufacture silicon solar cells. Tracks 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.

MT 211 Electronic Circuits & Devices I 4
Includes 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.

MT 212 Electronic Circuits & Devices II 4
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.

MT 213 Electronic Circuits & Devices III 4
Covers filters 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 112.

MT 214 Digital Systems II 3
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 se-
**Mathematics**

**MTH 10B Fundamentals of Arithmetic II**
- 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.

**MTH 11B Fundamentals of Arithmetic II**
- Use of fractions and decimals to write, manipulate, interpret, and solve applications and formulas. 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.

**MTH 11C Fundamentals of Arithmetic II**
- 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.

**MTH 15 Conquering Math Anxiety**
- 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)**
- Use fractions, decimals, percents, integer arithmetic, measurements, and geometric properties to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, and symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. The TI-30X II is recommended. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250).

**MTH 20B Basic Math IV**
- 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).

**MTH 21C Percentage and Statistics**
- Use fractions, decimals, and percents to write, manipulate, interpret and solve applications and formulas. 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).

**MTH 22 Measurements**
- Use both English and Metric measurements, conversions, temperature, and to write, manipulate, interpret, and solve applications and formula problems. Scientific calculator with fraction capabilities required. Prerequisite: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250).

**MTH 22C Measurements**
- 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).
Course Descriptions

MTH 60 Introductory Algebra - Part I
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).

MTH 61 Introductory Algebra - Part II
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).

MTH 62 Intermediate Algebra Part III
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. It is recommended. 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).

MTH 63 Introductory Algebra - Part III
Introduces algebraic concepts and processes with a focus on functions, linear systems, 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. Prerequisites: (MTH 60 or MTH 62) AND (RD 80 or ESOL 250).

MTH 65 Introductory Algebra - Second Term
Introduces algebraic concepts and processes with a focus on functions, linear systems, 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. Prerequisites: (MTH 60 or MTH 62) AND (RD 80 or ESOL 250).

MTH 70 Review of Introductory Algebra
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. Application 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) (RD 80 or ESOL 250).

MTH 75 Introduction to Formal Geometry
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.

MTH 91 Intermediate Algebra Part I
Functions are explored graphically and symbolically with an emphasis on function notation. Functions, equations, and graphs involving quadratic, rational, and radical expressions are investigated. Technology is integrated throughout. A graphing calculator is required: TI 89/92 plus or Voyage 200 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisite: MTH 63, MTH 65 or MTH 70 and placement into WR 115.

MTH 92 Intermediate Algebra Part II
Functions are explored graphically and symbolically with an emphasis on function notation. Functions, equations, and graphs involving quadratic, rational, and radical expressions are investigated. Technology is integrated throughout. A graphing calculator is required: TI 89/92 plus or Voyage 200 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisite: MTH 91 and placement into WR 115.

MTH 93 Intro to the TI Graphing Calculator
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.

MTH 95 Intermediate Algebra
Functions are explored graphically and symbolically with an emphasis on function notation. Functions, equations, and graphs involving quadratic, rational, radical, and absolute value expressions are investigated. Technology is integrated throughout. A graphing calculator is required: TI 89/92 plus or Voyage 200 recommended. Prerequisites: MTH 63, MTH 65 or MTH 70 and placement into WR 115.

MTH 105 Explorations in Mathematics
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 equivalent placement test scores.

MTH 111B College Algebra-Business, Management, Life & Social Science
Relations and functions are investigated graphically, numerically, symbolically, and verbally. Logarithmic functions, exponential functions, and systems of equations are explored. Special topics include mathematical notation, logic, and algorithms. Students learn to use technology in various applications. Technology is integrated throughout the course. TI graphing calculator required, see instructor at first class meeting. Prerequisites: WR 115, RD 115 and MTH 95 or equivalent placement test scores.

MTH 111C College Algebra for Math, Science, & Engineering
Relations and functions are investigated graphically, numerically, symbolically, and verbally. Exponential, logarithmic, polynomial, power, and rational functions are explored. Special topics include systems of linear and non-linear equations. Applications are investigated from Science and Engineering perspectives. Technology is integrated throughout the course. Students communicate results in oral and written form. Prerequisites: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Graphing calculator required: TI 89, TI 92 or Voyage 200 recommended.

MTH 112 Elementary Functions
Investigated graphically, numerically, symbolically, and verbally include: trigonometric functions and their graphs, trigonometric equations and identities, solution of right and oblique triangles, vectors, polar coordinates, parametric equations and complex numbers. Technology is integrated throughout the course. Students communicate results in oral and written form. Graphing calculator required: TI 89, TI 92 or Voyage 200 recommended. Prerequisites: WR 115, RD 115 and MTH 111B or MTH 111C or equivalent placement test scores.

MTH 211 Foundations of Elementary Math I
Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Various manipulatives 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.

MTH 213 Foundations of Elementary Math II
Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Various manipulatives and problem solving approaches are used to explore informal geometry, transformational geometry, and measurement systems. Prerequisite: MTH 211 and its prerequisite requirements.

MTH 231 Elements of Discrete Mathematics I
A survey course introducing the language, concepts, techniques, and applications of Discrete Math. Topics include: Logic, Set Theory, Graph Theory, Boolean Algebra, Math Induction, and Recursion. Prerequisites: MTH 111B or MTH 111C.

MTH 232 Elements of Discrete Mathematics II
A second term of a survey course that continues with topics from Discrete Mathematics. Topics include: direct proof and counterexample, probability, combinatorics, cardinality, and algorithms. Students will not get credit for both (CS 251 and 252); and (MTH 231 and MTH 232). Prerequisite: MTH 231 and its prerequisite requirements.

MTH 241 Calculus for Management, Life and Social Science
Topics include limits, continuity, derivatives, and integrals. Applications are investigated from science, business, and social science perspectives. TI graphing calculator required, see instructor at first class meeting. Prerequisite: MTH 111B or MTH 111C and their prerequisite requirements.

MTH 243 Statistics I
Topics include displaying data with graphs, numerical descriptions of data, producing data, elementary probability, probability distributions, and introduction to confidence intervals. Applications are investigated from science, business, and social science perspectives. TI graphing calculator with advanced statistical programs and/or computer software, see instructor. Prerequisites: MTH 111B or MTH 111C and their prerequisite requirements.

MTH 244 Statistics II
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 and/or computer software, see instructor. Prerequisites: MTH 243 and its prerequisite requirements.

MTH 251 Calculus I
Develop an understanding of limits, continuity, derivatives and applications of derivatives. Students will communicate their results in oral and written form. Prerequisites: MTH 112 or CMET 131; and their prerequisite requirements. Students must also register for a MTH 251 lab section.
MTH 252 Calculus II 5 Develop an understanding of antiderivatives, the definite integral, topics of integration, improper integrals, and applications of integration. Students will communicate their results in oral and written form. Graphing calculator required; TI 89, TI 92 Plus, or Voyage 200 recommended. Prerequisites: MTH 251 and its prerequisite requirements.

MTH 253 Calculus III 5 Topics include: infinite sequences and series (emphasis on Taylor series), an introduction to differential equations, and vectors in three space. Students will communicate their results in oral and written form. Graphing calculator required; TI 89, TI 92 Plus or Voyage 200 recommended. Prerequisites: MTH 252 and its prerequisite requirements.

MTH 254 Vector Calculus I 5 Topics include 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. Students will communicate their results in oral and written form. TI graphing calculator required, see instructor at first class meeting. Prerequisites: MTH 253 and its prerequisite requirements.

MTH 256 Differential Equations 5 Study 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. TI graphing calculator required, see instructor at first class meeting. Prerequisites: MTH 253 and its prerequisite requirements. Recommended: MTH 261.

MTH 261 Applied Linear Algebra I 5 Overview of linear algebra with some applications. Includes linear systems, vectors, and vector spaces, including eigenspaces. TI graphing calculator required, see instructor at first class meeting. Prerequisites: MTH 253 and its prerequisite requirements.

PROFESSIONAL MUSIC

MUC 101 Commercial Music Theory I 3 Covers chord types and scales, and their proper spellings. Practice dictation practice. Includes music copying.

MUC 102 Commercial Music Theory II 3 Covers functional harmony and altered chords, especially dominants. Focuses on chord progressions presented aurally and analyzed in reference to popular tunes, and scalar 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.

MUC 103 Commercial Music Theory III 3 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.

MUC 120A Sight Singing and Ear Training I 1 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.

MUC 120B Sight Singing and Ear Training II 1 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.

MUC 120C Sight Singing and Ear Training III 1 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.

MUC 123 Electronic Music I 2 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 I 2 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.

MUC 125 Electronic Media II 2 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.

MUC 130A Rhythm Training I 1 Develops basic skills of rhythmic sight reading.

MUC 130B Rhythm Training II 1 Develops basic skills of rhythmic sight reading.

MUC 130C Rhythm Training III 1 Develops basic skills of rhythmic sight reading.

MUC 140A Group Piano I 2 Introduces the basics of piano technique with correct observance of pitch, clef, meter, phrasing and interpretation in a contemporary style.

MUC 140B Group Piano II 2 Advanced beginner to intermediate instruction for piano. Develops practice skills, sight reading and technical form. Also covers musical fundamentals, harmony, notation, improvisation, and stylistic nuances.

MUC 143 Group Percussion 2 Uses rhythms from rock, jazz, R&B, funk and Latin music to cover basic techniques of performance on percussion instruments.

MUC 144 Contemporary Singing 2 Covers basic technical skills necessary to develop individual ability in solo or ensemble performance. CDA: Additional lab hours may be required.

MUC 145A Group Guitar/Bass I 2 Beginning instruction for guitar and bass. Includes basic chords, strums, patterns and song forms.

MUC 145B Group Guitar/Bass II 2 Advanced beginner to intermediate instruction for guitar and bass.

MUC 150A Keyboard Harmony I 1 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.

MUC 150B Keyboard Harmony II 1 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. Must have prerequisite or instructor permission. Prerequisite: MUC 150A.

MUC 150C Keyboard Harmony III 1 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.

MUC 152A Contemporary Arranging: Settings for Originals and Covers I 3 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.

MUC 152B Contemporary Arranging: Settings for Originals and Covers II 3 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.

MUC 152C Contemporary Arranging: Settings for Originals Covers III 3 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.

MUC 154A Band Performance Workshop
Course Descriptions

2 Class chooses, rehearses, and performs a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Rehearsal and presentation skills developed.

MUC 154B Band Performance Workshop 2 Class chooses, rehearses, and performs a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Rehearsal and presentation skills developed.

MUC 154C Band Performance Workshop 2 Class chooses, rehearses, and performs a variety of musical styles, vocal and instrumental. Includes popular, jazz and R&B. Rehearsal and presentation skills developed.

MUC 155 Introduction to Improvisation 2 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.

MUC 155A Improvisation I 2 Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic ramps. Includes harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form.

MUC 155B Improvisation II 2 Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic ramps. Includes harmonic construction of all styles jazz and ear training. By the end of the sequence, students match solo against song form.

MUC 155C Improvisation III 2 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 ramps. Focuses on harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form.

MUC 164 Survey of the Music Industry 1 Provides overview of career options in the music industry. Focuses on making a reasonable and informed choice as to a career in music.

MUC 165 Business for the Musician 1 Teaches 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.

MUC 167 The Music Business: Career Opportunities and Self Defense 2 Covers what you need to know to pursue a career in music and the music business.

MUC 222 Introduction to Recording Technologies 2 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.

MUC 223 Studio Recording Technology I 3 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.

MUC 224 Studio Recording Technology II 3 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.

MUC 225 Studio Recording Technology III 3 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 224.

MUC 226 Digital Recording I 3 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.

MUC 227 Digital Recording II 3 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.

MUC 228 Digital Recording III 3 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.

MUC 234 Income Tax Preparation for Musicians 1 Prepare federal and state individual returns, and introduces partnership and corporate taxation. Includes basics of record-keeping and financial planning.

MUC 280A Cooperative Education: Vocational Education 1 Music Develops individual music performance, writing or recording skills in a department approved work setting. Department permission required. Corequisite: MUS 280B.

MUP 100 Individual Lessons for Non-majors 1 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.

MUP 171 Applied Piano 1
such as rhythm, melody, harmony and structure. Includes basic note reading and building of music literacy skills. No prior music experience required.

**MUS 105 Music Appreciation 3** 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.

**MUS 106 Opera Appreciation 3** Covers musical and dramatic analysis of opera. Read about and listen to operas dating from 1660 to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

**MUS 108 Music Cultures of the World 3** Examines the world’s music with attention to musical styles and cultural contexts. Includes the study of Oceania, Indonesia, Africa, India, China, Japan, Middle East, Latin America, and ethnic North America. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

**MUS 110 Fundamentals of Music 4** 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

**MUS 111 Music Theory I (part one) 3** 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. Meets arts and humanities sequence requirement for Associate of Arts Oregon Transfer degree. MUS 111C recommended for music transfer students. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and MUS 110.

**MUS 111C Music Theory I: Sight Singing and Ear Training (part one) 1** 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: WR 115 or equivalent placement test scores, and MUS 111.

**MUS 112 Music Theory I (part two) 3** 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. Meets arts and humanities sequence requirement for Associate of Arts Oregon Transfer degree. Concurrent enrollment in MUS 112C recommended for music transfer majors. Prerequisites: MUS 111 and its prerequisite requirements.

**MUS 112C Music Theory I: Sight Singing and Ear Training (part two) 1** 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 111C.

**MUS 113 Music Theory I (part three) 3** 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.

**MUS 113C Music Theory I: Sight Singing and Ear Training (part three) 1** Continues development of skills learned in MUS 112C. Includes twopart melodic and rhythmic notation. Introduces secondary function and diatonic modulation. Part three of three-term sequence. Corequisites: MUS 113. Prerequisite: MUS 112C. Corequisite: MUS 113C.

**MUS 125 Guitar Clinic and Workshop 2** Focuses 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 guitarist and teaching methods. Also includes fretboard theory and live performance Prerequisite: MUS 191.

**MUS 131 Group Vocal 1** 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.

**MUS 153A Musical Theatre Vocal 1** Selection by audition to cast of musical theatre production. Evening rehearsals during term, performances at conclusion of term.

**MUS 153B Musical Theatre Vocal 2** Selection by audition to cast of musical theatre production. Evening rehearsals during term, performances at conclusion of term.

**MUS 153C Musical Theatre Vocal 3** Selection by audition to cast of musical theatre production. Evening rehearsals during term, performances at conclusion of term.

**MUS 158 Chamber Ensemble 1** 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.

**MUS 170 Music and Computers 2** 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.

**MUS 190 Introduction to Piano 2** 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.

**MUS 191 Class Guitar 2** Group instruction in guitar. Covers traditional classical guitar technique. Focuses on note reading and basic music theory as applies to guitar. Topics include single line first position melodies, common arpeggio patterns and music in two or more parts. Includes both solo and ensemble performance. Attention given to history and repertoire of the guitar. No previous experience required.

**MUS 191P Class Piano I 2** 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.

**MUS 192 Class Guitar II 2** Group instruction in guitar. Continues material presented in Music 191. Topics include reading notes up to the twelfth 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.

**MUS 192P Class Piano II 2** Continues group instruction in piano performance covered in MUS 191p. 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 191p.

**MUS 193 Class Guitar III 2** Group instruction in guitar. Continues material presented in Music 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.

**MUS 193P Class Piano III 2** 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.

**MUS 195 Symphonic Band 1** Large conducted ensemble for brass, woodwind and percussion instruments rehearses and performs repertoire from the 17th-21st centuries. Designed for music majors but is available to all students. Previous high-school level band experience or equivalent is required.

**MUS 201A Introduction to Music and Its Literature 3** Covers music of the Medieval, Renaissance
and Baroque eras of music history. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

MUS 202 Introduction to Music and Its Literature 3 Covers music of the Classic and Romantic eras of music history. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

MUS 203 Introduction to Music and Its Literature 3 Covers music of the post-Romantic era and the 20th century. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

MUS 204 Music of the Western World 4 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.

MUS 205 Introduction to Jazz History 3 Covers the 90-year history of jazz, a truly American art form. Eras, styles, and significant artists are examined and analyzed. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

MUS 206 Introduction to the History of Rock Music 3 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.

MUS 207 Introduction to the History of Folk Music 3 Examines ballads, worksongs, bluegrass, country blues and gospel music are examined as well as influential non-American styles. Also covers protest songs and the “folk revival” of the sixties. Prerequisite/concurrent: WR 115 or equivalent placement test scores.

MUS 208 African-American Music 3 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.

MUS 209 African-American Music 3 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.

MUS 210 African-American Music 3 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.

MUS 211A Music Theory II 3 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.

MUS 211B Music Theory II: Keyboard Harmony 1 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.

MUS 212A Music Theory II 3 Continues work on skills from Music Theory I, adding compositional techniques associated with the 20th century, as well as introducing tonal counterpoint and formal musical analysis. Prerequisite: MUS 211.

MUS 212B Music Theory II: Keyboard Harmony 1 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.

MUS 213A Music Theory II 3 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.

MUS 213B Music Theory II: Keyboard Harmony 1 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 213B.

MUS 214 Music of Broadway 3 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.

MUS 220 Chorus 1 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.

MUS 221 Chorus: Chamber Choir 1 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.

NURSING

NRS 110 Foundations of Nursing in Chronic Illness I 6 This course introduces assessment and common interventions (including technical procedures) for clients with chronic illnesses common across the life span in major ethnic groups within Oregon. The client’s and family’s “lived experience” of the condition is explored. Clinical practice guidelines and research evidence are used to guide clinical judgments in care of individuals with chronic conditions. Multidisciplinary team roles and responsibilities are considered in the context of delivering safe, high quality health care to individuals with chronic conditions (includes practical and legal aspects of delegation). Cultural, ethical, legal and health care delivery issues are explored through case scenarios 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 class room and clinical learning experiences. Prerequisite: NRS 110. Co-requisite: NRS 230 and NRS 232.

NRS 112 Foundations of Nursing in Acute Care I 6 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 232.

NRS 221 Chronic Illness II 9 This course builds on foundations of nursing in Chronic Illness I. Chronic Illness II expands the student’s knowledge related to family care giving, symptoms 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 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 This course is designed to formalize the clinical judgments, knowledge, and skills necessary in safe, registered nurse practice. Faculty/Classical 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 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, nonopioid 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 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 pharmacological processes not contained in Pathophysiological Processes I. Prerequisite: NRS 111, NRS 230 and NRS 232. Co-requisite: NRS 112 and NRS 231.

NRS 233 Pathophysiological Processes II 3 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 110. Co-requisite: NRS 111 and NRS 230.

OPHTHALMIC MEDICAL TECHNOLOGY

OMT 102 Pharmacology/Eye Disease I 2 Studies major ocular diseases and related structures integrated with symptomology and treatment. Introduction of ophthalmic drugs.

OMT 103 Pharmacology/Eye Disease II 2 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.

OMT 104 Ophthalmic Office Procedures 3 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 Covers basic test principles and techniques including tangent screen visual fields, non-contact tonometry, tear function, color plates, slit lamp function, extra-ocular muscle function and anterior chamber depth. Assisting the physically or visually disabled patient and dealing with children during the eye examination is addressed.

OMT 111 Medical Terminology 4 Covers prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms. Course taught by body systems. English communication skills necessary.

OMT 121 Practicum I Introduces clinical work designed to apply technical skills acquired in previous course work. Recording of clinical data, front office procedures, obtaining patient's health and ocular history, measuring visual acuity, medical record management, commonly used abbreviations/terms stressed.

OMT 145 Clinical Optics I 2 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.

OMT 146 Clinical Optics II 2 Continuation of OMT 145 Clinical Optics 1. Introduces principles of refraction, refractometry, basic lensometry, basic keratometry, and prisms as they relate to ocular motility. Prerequisite: OMT 145.

OMT 163 Ocular Anatomy and Physiology 2 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.

OMT 206 Diagnostic Procedures I 4 Introduces fundamentals of diagnostic testing and techniques including: applanation and Schiotz tonometry and biomicroscopy. Presents principles and techniques of refractometry and retinoscopy with emphasis on skill development utilizing the schematic eye.

OMT 207 Diagnostic Procedures II 4 Presents principles and techniques of various methods of visual field examination. The visual pathway, common causes of visual field loss, and related anatomy will be covered with emphasis on Goldmann perimetry. Also covers principles and techniques of ophthalmoscopy, color vision and tear function tests. Emphasis placed on skill development.

OMT 208 Ocular Motility/Binocular Vision 2 Introduces ocular motility and binocular vision. Emphasizes placed on understanding the presentation, characteristics, natural history of the strabismus patient. Amblyopia and binocular vision are also addressed.

OMT 209 Surgical Assisting Procedures 3 Addresses the technican’s role in minor office surgery and assisting in the operating room. Topics include proper aseptic technique, scrubbing, gowning and gloving, sterilization of instruments, the importance of surgical conscience/legal responsibilities, proper disposition of supplies/medications and security procedures of medications as regulated by law.

OMT 210 Therapeutic Assisting Procedures 4 Focuses on technican’s role in assisting in the management of preoperative and post operative patients. More advanced ophthalmic procedures included such as ultrasound, potential acuity meter, direct ophthalmoscope and contrast sensitivity. Specimen collection for the laboratory addressed.

OMT 212 Contact Lens I 3 Covers fundamentals of contact lens. Principles of lens structures, materials used in manufacture, categorization, comparison of characteristics of soft and rigid lenses. Includes theory and utilization of instruments commonly used in fitting and assessing contact lenses. Includes use of keratometer, biomicroscope, radiocule, lensometer, gauges, rules, magnifiers and fluorescent tubes.

OMT 213 Contact Lens 2 3 Continuation of OMT 212. Covers fitting theories and principles for soft and rigid contact lenses, solutions for care and maintenance, dispensing, patient education, post fitting observations and theories on fitting keratoconus and bifold contact lenses. Lab activities allow for observation of physical properties and fitting challenges of contact lenses.

OMT 222 Practicum II 4 Work in local ophthalmic
practices and health care facilities under the supervision of facility personnel. Includes exposure to actual working conditions and skills in ophthalmic diagnostic and therapeutic procedures.

OMT 223 Practicum III 4 Work in local ophthalmic practices and health care facilities under the supervision of facility personnel. Includes exposure to actual working conditions and skills in ophthalmic diagnostic and therapeutic procedures.

OMT 224 Practicum IV 4 Work in local ophthalmic practices and health care facilities under the supervision of facility personnel. Includes exposure to actual working conditions and skills in ophthalmic diagnostic and therapeutic procedures.

OMT 231 Seminar I 1 Discusses practicum experiences, review of major professional subject areas, and hear guest speakers on topics of interest to the class. Complete clinical research papers.

OMT 232 Seminar II 2 Discusses practicum experiences, review of major professional subject areas, and hear guest speakers on topics of interest to the class.

OMT 233 Seminar III 2 Discusses practicum experiences, review of major professional subject areas, and hear guest speakers on topics of interest to the class.

OMT 234 Seminar IV 2 Discusses challenges confronting practitioners and the presentation of new material in the field. May include field trips and guest speakers on topics of interest. Discussion of clinical practicum experiences and a general review for national certification examinations included.

OMT 283 Perception/Low Vision 2 Covers theories of visual perception and how lenses affect perception. Introduces basic and advanced visual aids and their application to patients with various forms of low vision. Concepts of depth perception and color vision explored.

OFFICE SYSTEMS

OS 131 10-key on Calculators 1 Develops 10-key skills by touch. Recommended: qualify to enter Reading 115 or WR 115.

OS 220 Business Editing Skills 4 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.

OS 240 Filing and Records Management 4 Develops 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.

OS 245 Office Systems and Procedures 4 Develops the skills of an administrative professional for current business practices. Use computer technology for tasks 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.

OS 250 Creating a Virtual Office 4 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.

OS 251 Virtual Office Concepts 4 Learn 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, and negotiating contracts. Recommended: OS 250.

OS 280F Cooperative Education: Administrative Assistant Provides field experience for the administrative assistant student. Recommended: RD 115, WR 115 and satisfactory progress through at least 15 credit hours of CAS/OS courses, or instructor permission required.

OS 280G Cooperative Education: Administrative Assistant - Seminar 1 Supplements 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 credit hours of CAS/OS courses, or instructor permission required.

PHYSICAL EDUCATION

PE 10 Physical Education Activity Program 1 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.

PE 180A Beginning Swimming 1 Introduces swimming and aquatic skills to students who have very limited or no swimming skills and may be uncomfortable in the water.

PE 180B Intermediate Swimming 1 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 permission.

PE 180C Advanced Swimming 1 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.

PE 180F Lap Swimming 1 Continued improvement of skillswimmer's cardiovascular endurance. Explores and develops various training methods to enhance swimming techniques and knowledge of training strategy.

PE 180G Swim Conditioning 1 Uses aspects of swim skills to improve cardiovascular endurance, muscular strength/endurance, and flexibility. Includes water/land exercises, lap swimming and water games. Recommended: Intermediate level swim skills or equivalent.

PE 180H Aquatic Exercise 1 Includes aerobic exercise, strength conditioning, and stretching movements set to music. Performed in shallow and deep water to reduce the effects of gravity. Swimming skills are not required.

PE 180K Masters Swimming 1 Enjoy a more competitive swimming class that incorporates all competition strokes, turns, strategies and training. Possibilities for optional weekend Masters swim meets. Advanced swimming skills highly recommended.

PE 181A Beginning Weight Training - Coed 1 Stresses the proper techniques of weight lifting and the development of muscular strength and endurance. Individual programs developed which allow for body and strength differences and safety in lifting.

PE 181B Intermediate Weight Training - Coed 1 Continues the development of the student's strength/fitness. Individual evaluation and weight lifting programs developed to meet the student's needs. Recommended: Beginning weight training or equivalent.

PE 181C Advanced Weight Training - Coed 1 High level development of student muscular strength, endurance and cardiovascular fitness. Individual programs developed to meet the student's needs. Recommended: Intermediate weight training or equivalent.

PE 181D Circuit Weight Training I - Coed 1 Cardiopulmonary and strength fitness are maintained/improved through the use of multiple weight and aerobic stations, based on a structured time and rotation system.

PE 181E Circuit Weight Training II - Coed 1 Cardiopulmonary and strength fitness are maintained/improved through the use of multiple weight and aerobic stations, based on a structured time and rotation system.

PE 182A Beginning Group Fitness 1 Offers students knowledge and skills to keep fit for life. Teaches safe performance of movement and exercise in a progressive approach. Includes cardiovascular and muscular endurance, flexibility and body composition. Aerobic training principles stressed using target heart rate and Borg methods.

PE 182B Intermediate Group Fitness 1 Offers students an opportunity to improve and/or maintain a high level of fitness. Includes cardio-vascular endurance, muscular endurance, flexibility, and body composition. Recommended: Beginning Aerobic Fitness or a recent aerobic dance/exercise class.

PE 182C Beginning Fitness and Walking 1 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.

PE 182D Intermediate Fitness & Walking 1 Improves fitness through self-paced walking programs designed to increase the frequency and duration of regular workouts. Incorporates a walking program into a total fitness program for future use. Recommended: Beginning Fitness and Walking or average fitness level.

PE 182E Jogging for Health 1 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.

PE 182F Boot Camp 1 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.

PE 182G Tai Chi II 1 Continue the exploration of theories and movement principles introduces 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.

PE 182H Adult Fitness 1 Exercises and activities which strengthen and condition specific large muscle groups, improve cardiovascular fitness and flexibility.

PE 182J Gentle Yoga 1 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.

PE 182K Yoga I 1 Introduces the values and skills of Hatha Yoga (Yoga of exercise). Includes basic Yoga philosophy and exercises for increased flexibility, improved health, relaxation, and reduced stress in daily living.

PE 182L Yoga II 1 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.

PE 182N Corrective Physical Education 1 Individualized, self-paced exercise and swim programs for students with acute or chronic injuries or disabilities.

PE 182P Body in Balance - Pilates Conditioning 1 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.

PE 182Q Self-Paced Fitness 1 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.

PE 182R Back Care 1 Explore appropriate exercises, body mechanics, posture, and other techniques for prevention and relief of back pain.

PE 182S Tai Chi 1 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.

PE 182T Triathlon Training 1 Prepares student for Olympic and/or Sprint distance swim, bike, run 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 off campus events.

PE 182U Pilates II 1 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.

PE 183E Beginning Tennis 1 Includes basic history/taxonomy/etiquette/strategy and skills of game.

PE 183F Intermediate Tennis 1 Builds further on the beginning techniques of the game. Emphasizes singles, doubles, and competition play.

PE 183G Beginning Golf 1 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.

PE 183H Intermediate Golf 1 Emphasizes proper use of all clubs under variable conditions. Focuses on rules, etiquette and course management. Requires several out-of-class rounds.

PE 183I Beginning Volkswalking 1 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.

PE 183J Intermediate Volkswalking 1 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. Recommend: Beginning Volkswalking or average fitness level.

PE 183K Pickleball/Badminton 1 Introduces the fundamentals of pickleball and badminton. Racquet grip, hitting strokes, court position, strategy and rules of the games will be taught.

PE 183M Advanced Volkswalking 1 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. Recommend: Intermediate Volkswalking or above average fitness level.

PE 183N Racquet Sports 1 Introduces two court games: pickelball 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.

PE 183O Beginning Table Tennis 1 Introduces fundamentals of table tennis skills in singles/doubles, serving, smashing, forehand/backhand rules and strategy. Knowledge and recreational play emphasized.

PE 183P Intermediate Table Tennis 1 Reviews strokes, strategies, and skills in singles and doubles play. Emphasizes recreational and competitive play. Recommended: Beginning table tennis skills.

PE 183Q Advanced Table Tennis 1 Reviews skills, strokes and strategies used in singles and doubles play. Prepare for competition necessary to play. Recommend: Beginning, intermediate table tennis or equivalent experience.

PE 183R Beginning Karate 1 Introduces a working knowledge of the fundamental techniques employed in the art of Karate-Do.

PE 183S Beginning Karate II 1 Progressive continuation of fundamental techniques employed in the art of Karate-Do. Recommended: Beginning Karate I or equivalent.

PE 183T Aikido I 1 Introduces a working knowledge of the fundamental techniques employed in the art of Aikido.

PE 183U Aikido II 1 Progressive continuation of the fundamental techniques employed in the art of Aikido.

PE 183V Judo I 1 Introduces a working knowledge of the fundamental techniques employed in the art of Kodolvan Judo.

PE 183W Judo II 1 Build on knowledge and skill areas covered in Judo I.

PE 183X Tae Kwon Do I 1 Introduces a working knowledge of the fundamental techniques employed in the art of Tae Kwon Do.

PE 183Y Tae Kwon Do II 1 Progressive continuation of the fundamental techniques employed in the art of Tae Kwon Do.

PE 183Z Tae Kwon Do III 1 Expands knowledge of Tae Kwon do techniques beyond the basics. Learn new applications while strengthening your self defense skills. Continuing rank advancement is encouraged. Recommended: PE 182S or instructor approval.

PE 184A Beginning Skiing - Nordic 1 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.

PE 184B Intermediate Skiing - Nordic 1 Emphasizes techniques to increase power and control in the diagonal stride, speed control in varied downhill conditions, varied turning maneuvers and beginning skiing and telemark skiing Recommended: experience in basic cross country skiing.

PE 184C Advanced Skiing - Nordic 1 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
PE 184D Beginning Skiing - Alpine 1 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.

PE 184E Intermediate Skiing - Alpine 1 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.

PE 184F Advanced Skiing - Alpine 1 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. Addresses variables of weather, snow conditions, and terrain. Recommended: Intermediate Alpine class or equivalent.

PE 184I Beginning Snowboard Skiing 1 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. Recommended: Beginning Snowboarding class or equivalent.

PE 184J Intermediate Snowboard Skiing 1 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.

PE 184K Alpine Ski Instructor Training 1 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.

PE 184L Advanced Snowboard Skiing 1 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 snowboard skiing or equivalent.

PE 185A Beginning Basketball 1 Provides instruction in basketball fundamentals, skills, and rules through drills and game play.

PE 185B Intermediate Basketball 1 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.

PE 185C Advanced Basketball 1 Emphasizes continued development of skills necessary to participate in basketball at an advanced level through game play and drills. Beginning/Intermediate basketball skills required.

PE 185D Beginning Volleyball 1 Includes basic history, terminology, etiquette, strategies and skills of game.

PE 185E Intermediate Volleyball 1 Builds further on the beginning techniques of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required.

PE 185F Advanced Volleyball 1 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.

PE 185G Beginning Soccer 1 Basic skills, rules, and strategies for soccer will be taught. Includes dribbling, kicking, trapping, heading, throw-in, tackling, shooting, goalie play, corner kicks, goalie kicks, penalty kicks, soccer formations (5-3-2, 4-3-3, 3-3-4, 2-4-4), defensive play, offensive play, rules of soccer.

PE 185H Advanced Soccer 1 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, goalkeeper play, soccer formations, defense, offense, rules. Beginning and intermediate soccer skills required.

PE 185I Flag Football 1 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.

PE 185J Softball 1 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.

PE 185K Ultimate Frisbee 1 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.

PE 185L Intermediate Soccer 1 Applies skills acquired in basic/beginning soccer play. Utilizes kicking, passing, dribbling, heading, play strategies, and goalkeeper skills. May be played on outdoor field or altered for indoor play.

PE 185M Lacrosse - Beginning 1 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.

PE 185N Lacrosse - Intermediate 1 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.

PE 186A Ballet 1 1 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.

PE 186B Ballet 2 1 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.

PE 186C Ballet III 1 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). Recommend: PE 186B or D 192B or equivalent.

PE 186D Ballroom Dance 1 Introduces the fundamental principles of Ballroom Dance. Emphasis placed on proper partnering, style, and phrasing. Focus on the elementary steps of Foxtrot, Waltz, Swing, Cha Chas, and Rumba combinations.

PE 186F Jazz Dance I 1 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.

PE 186G Jazz Dance II 1 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.

PE 186H Jazz Dance III 1 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). Recommend: PE 186G or D 151 or equivalent.

PE 186I Modern Dance I 1 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).

PE 186J Modern Dance II 1 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 186I separately or in combination). Recommended courses: D 192C or PE 186I or equivalent.

PE 186K Tap Dance I 1 Introduces beginning skills in tap dance. Covers basic steps, terminology, rhythms, and combinations.

PE 186M Tap Dance II 1 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 complete dances. Recommended: D 175A or PE 186K or equivalent

PE 186P Pilates for Dancers 1 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 students as it pertains to dance. Benefits include core strength and stabilization, muscle tone, flexibility, improved posture and body/mind awareness. Prerequisite: PE 182U or instructor permission.

PE 186R Hip Hop 1 Introduces the fundamental principles and skills of Hip Hop dance. Emphasis placed on development of correct technique, strength, flexibility, musicality, and individual expression through movement. Focus on Hip Hop elements, culture and terminology.

PE 281 Professional Activities: Weight Training 2 Work with a faculty mentor to develop knowledge and skill in weight training. Design programs for circuit training and strength and endurance training. Includes equipment selection, teaching methods and safety guidelines. Prerequisite: PE 181A or 181B

PE 282A Professional Activities: Aerobic Group Exercise 1 Work with a faculty mentor to explore and develop knowledge about aerobic fitness. Covers components of aerobic fitness, styles of aerobic exercise, and teaching methods. Corequisite: Concurrent enrollment in PE 182A, 182B, or instructor permission.

PE 282B Professional Activities: Special Populations 2 Work with a faculty mentor to identify special populations within the fitness industry. Explore the needs and abilities of these populations with an emphasis on modifications in assessments, adaptive equipment, and fitness programs. Recommended: Active email account and transportation to Portland metropolitan area facilities.

PE 283 Professional Activities: Mind/Body Disciplines 1 Explores, with faculty mentor, traditional and contemporary mind/body disciplines. Applies mind/body principles to fitness programming. Corequisites: PE 182J, PE 182K, PE 182L or PE 182S.

PE 287 Professional Activities - Aquatics 1 Work with a faculty mentor to develop knowledge and skill in aquatics. Explores the use of swimming and water exercise to achieve total fitness. Corequisite: Concurrent enrollment in PE 180H, PE 180G, or PE 180F or instructor permission.

PE 288 Professional Activities: Team Sports Training 1 Work with faculty mentor to explore and develop knowledge about Team Sport Leadership and Athletic Ability Components of Physical Fitness: Covers components of coaching team sports and skill-related physical fitness: Progressions and techniques of practice format, sport specific drills, plyometrics, speed-agility-quickness coaching strategies and methodology. Concurrent enrollment in a team sport physical education class.

PE 291A Lifeguard Training 2 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. Red Cross swim screening test required.

PE 292A Water Safety Instructor 2 Teaches 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.

PHILOSOPHY

PHL 185 Computer Ethics 3 Discusses ethical and social issues around the use of computer technology. Computer use has created unique ethical issues not addressed in traditional ethics for computer professionals and even casual computer users. It is 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.

PHL 191 Critical Thinking: Language and the Layout of Argument 4 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHL 195 Critical Thinking: Science and the Occult 4 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.

PHL 197 Critical Thinking: Television & The Presentation of Reality 4 Thoughtful and critical look at television programming. Includes news, entertainment programming and commercials. Emphasizes thinking, talking and writing about what students see on TV and reflecting on how television influences their images of themselves and their reality. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHL 201 Introduction to Philosophy: Philosophical Problems 4 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.

PHL 202 Introduction to Philosophy: Elementary Ethics 4 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.

PHL 204 Philosophy of Religion 4 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.

PHL 205 Contemporary Moral Problems: Biomedical Ethics 4 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.

PHL 206 Introduction to Environmental Ethics 4 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.

PHL 207 Ethical Issues in Aging 4 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.

PHL 208 Political Philosophy 4 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.

PHL 209 Business Ethics 4 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.

PHL 210 Introduction to Asian Philosophy 4 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.

PHL 211 Existentialism 4 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
PHL 221 Symbolic Logic 4 Propositional notation and truth value analysis of simple and compound statements. Includes quantificaional notation and deductive techniques for determining consistency and validity. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHL 222 The Philosophy of Art and Beauty 4 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.

PHL 298 Independent Study: Philosophy 4 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.

PHYSICS

PHY 101 Fundamentals of Physics I 4 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.

PHY 102 Fundamentals of Physics II 4 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.

PHY 103 Fundamentals of Physics III 4 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.

PHY 121 Elementary Astronomy 4 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.

PHY 122 Elementary Astronomy 4 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.

PHY 123 Elementary Astronomy 4 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.

PHY 196 Observational Astronomy 1 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.

PHY 201 General Physics 4 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 111A, B or C and their prerequisite requirements.

PHY 202 General Physics 4 Topics include mechanical properties of matter, heat, waves, sound and light. Algebra-based physics. Prerequisite: PHY 201 and its required prerequisites.

PHY 203 General Physics 4 Topics include electricity, magnetism and radioactivity. Algebra-based physics. Prerequisite: PHY 201 and its prerequisite requirements.

PHY 211 General Physics (Calculus) 5 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.

PHY 212 General Physics (Calculus) 5 Topics include concepts in fluid mechanics, waves, thermodynamics and optics. Prerequisites: PHY 211 and its prerequisite requirements.

PARALEGAL

PL 101 Introduction to Law - Fundamentals 3 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.

PL 102 Introduction to Law - Substantive Areas 3 Continues the study of several substantive areas of law. Prerequisite: PL 101.

PL 103 Introduction to Law - Ethics 3 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 102.

PL 104 Investigation Techniques for Paralegals 3 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.

PL 105 Litigation 3 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.

PL 106 Computer Research in Law 3 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 203.

PL 107 Techniques of Interview 3 Students study and conduct simulated interviews. Prerequisite: WR 121. Prerequisite/concurrent: PL 101.

PL 109 Estate Planning 3 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.

PL 111 Probate Practice 3 Covers preparation and filing of necessary papers used to administer an estate under Oregon state law.

PL 113 Income Tax Law 3 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.

PL 116 Real Property Law I 3 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.

PL 124 Law Office Management 3 Covers law office organization and management, personnel management, accounting, procedural and automated systems, and other aspects of law office management.

PL 128 Legal Correspondence and Forms 3 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, PL 102. Prerequisite/concurrent: PL 203.

PL 130 Legal Software 3 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. Recommend: CAS 133. Prerequisite: PL 101.

PL 140 Immigration Law for Paralegals 3 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.

PL 203 Legal Research and Library Use 3 Covers function of the law library and develops research skills through the use of digests, encyclopedias, reporter systems and practice manuals. Prerequisite: PL 101.

PL 204 Applied Legal Research and Drafting 3 Students practice legal research skills and draft legal memoranda common to the practice of law. Prerequisite: PL 203.

PL 206 Intellectual Property Law 3 Introduces the basic terms, concepts, laws, and administrative rules necessary to interpret and accomplish tasks typically assigned to paralegals by attorneys in intellectual prop-
PL 208 Family Law 3 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 co-habitation agreements.

PL 210 Advanced Estate Planning 3 Covers estate planning as it applies to estate building. Includes pensions and business interests, retirement concerns including the living trust, taxation, entitlement, insurance, residence choices, use of charities. Also covers the interrelationship of the complexities of acquiring, using, protecting and passing an estate. Prerequisite: PL 109.

PL 214 Fiduciary Tax and Accounting 3 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.

PL 215 Employee Benefits Programs 3 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.

PL 216 Employment Law 3 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.

PL 217 Real Property Law II 3 Covers key real estate transactions documents and concepts, including earnest money agreements, deeds, title insurance escrow instructions, financing documents and closing documents.

PL 219 Contract and Consumer Law 3 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.

PL 220 Worker’s Compensation 3 Covers principles and procedures that exist in the Oregon 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 as the procedural skills.

PL 221 Bankruptcy Law 3 Covers Bankruptcy Code, Rules of Procedure, types of bankruptcy relief, exempt and non-exempt property, dischargeability of debts, and bankruptcy forms.

PL 222 Corporate Law Practice 3 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.

PL 224 Torts and Personal Injury 3 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.

PL 225 Advanced Law Office Management 3 Examines practical solutions to law office management problems through application of theory and concepts discussed using a case study approach.

PL 226 Criminal Law for Paralegal 3 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.

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 16 credits hours in Paralegal Program (unless waived by the Department) are required.

POLITICAL SCIENCE

PS 111 Skills and Issues 1 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.

PS 201 U.S. Government: Foundations & Principles 4 Examines the development of constitutional traditions in America. 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.

PS 202 U.S. Government: Institutions & Policies 4 Examines the national institutions of American politics including the Legislative, Executive, Judiciary, and Bureaucracy. Topics 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.

PS 203 State and Local Government 4 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.

PS 204 Comparative Political Systems 4 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.

PS 205 Global Politics: Conflict & Cooperation 4 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.

PS 211 Peace and Conflict 4 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.

PS 220 U.S. Foreign Policy 4 Historical analytical treatment of select foreign policy themes since World War I is presented. Examines the United States’ attempt to create world order through use of economic, military and diplomatic power; the roles of democratic institutions and decision-making elites in creating foreign policy, and the interdependent basis of the contemporary international system. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PS 225 Political Ideology: Alternative Idea Systems 4 Covers sources, strengths and weaknesses of contemporary ideologies, and the conditions which lead to conflict or to cooperation among them. Includes liberalism, conservativism, socialism, fascism, and other idea systems. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent test scores.

PS 280A 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.

PS 280B Cooperative Education: Community Service & Action Seminar 2 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.

PS 280C Cooperative Education: Peace and Conflict Extends knowledge of Peace and Conflict Studies through work and/or volunteer time spent in settings that provide learning experiences. Department permission required.

PS 298 Independent Study: Political Science 4 Advanced individualized study of areas of political science not considered in other courses to meet special interests or program requirements. Includes a term project and readings approved by the instructor. Recommended: prior study in political science and instructor permission.

PSYCHOLOGY

PSY 101 Psychology and Human Relations 4 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.

PSY 201 Introduction to Psychology - Part
Course Descriptions

PSY 201 or 201A. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 201A Introduction to Psychology - Part I
First term of a two-term sequence in introductory psychology covering the history of psychology, scientific methods, the brain and nervous system, sensation and perception, states of consciousness, human development, learning, memory, language, and cognition. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 202 Introduction to Psychology - Part II
Second term of a two-term sequence in introductory psychology, covering emotion, motivation, intelligence, personality, health psychology, abnormal psychology, therapies, and social psychology. Recommended: WR 201 or WR 201A. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 202A Introduction to Psychology - Part II
Second term of a two-term sequence in introductory psychology, covering emotion, motivation, intelligence, personality, health psychology, abnormal psychology, therapies, and social psychology. Course taught from a sociocultural approach which assumes that gender, culture, and ethnicity are essential to understanding behavior, thought, and emotion. Meets cultural diversity requirements for Associate Degrees. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 203 Introduction to Behavioral Neuroscience
Provides an interdisciplinary scientific introduction regarding how the brain produces behavior and psychological functions. Presents essential neurophysiological processes that underlie topics such as human development, cognitive and emotional functions, psychological disorders and addictions, cellular neuroanatomy and neurotransmitters forming a key foundation for understanding sensorymotor systems, brain rhythms, (including sleep), and brain plasticity. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and PSY 201 or one year biology.

PSY 204 Introduction to Personality
Covers personality theories including the theoretical and scientific explanations for individuals’ characteristic patterns of perception, thought, emotion, and behavior. Incorporates activities which help students apply what they have learned about personality theories to their personal and professional lives. Recommended: PSY 201A or 202A. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 205 Human Development
Surveys major theories of behavior and patterns of change and continuity in people over the life span. Emphasizes development from physical, cognitive, social, emotional, moral, and cultural perspectives from prenatal development through development of infants, children, adolescents, adults, and the elderly. Recommended: PSY 201A or 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 216 Social Psychology
Examines how society affects human behavior, including persuasion, conformity, aggression, conflict, and interpersonal attraction. Applications to business, politics, environment, health, the legal system and human relations. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 222 Family & Intimate Relationships
Explores processes involved in both traditional and non-traditional relationships and families, including love, cohabitation, dating, marriage, parenting, communication and conflict resolution, sexuality, balancing work and family, domestic violence, divorce, remarriage, and blended families. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 231 Human Sexuality
Part one of two-term sequence exploring sexual issues from scientific and humanistic perspectives. Topics: historical, cultural, cross-cultural perspectives on sexuality, research, female and male sexual and reproductive anatomy and physiology; gender issues; sexual response, communication, and behavior patterns; love and sexual orientations. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 232 Human Sexuality
Part two of two-semester sequence exploring sexual issues from scientific and humanistic perspectives. Topics: sexuality through the life cycle, sexual problems, sexual satisfaction, contraception, conception, sexuality and disability, sex and chronic illness, sexually transmitted infections, sexual victimization, atypical sexual behavior, commercialization of sex. Recommended: PSY 231 taken before PSY 232. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 236 Psychology of Adult Development and Aging
Provides an overview of the biosocial, cognitive, and psychosocial aspects of adulthood and aging. Emphasis on theories of aging, factors that influence health and aging, and the challenges and opportunities of aging. Attention will be given to contextual, cultural, gender, and ability issues as we age and their effects on the individual. Recommended: PSY 201A or PSY 215. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PSY 239 Introduction to Abnormal Psychology
Surveys the history, theories, diagnosis, etiology, and treatment of the major mental disorders. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and PSY 201 or 201A or 202 or 202A.

PSY 240 Personal Awareness and Growth
Provides theory and experience to acquire a comprehensive perspective on intra- and interpersonal dynamics related to personal growth and awareness. Activities provide opportunities to increase self-understanding, awareness, and acceptability; identify areas for potential growth, and explore awareness of self as perceived by others to improve effectiveness relating to other people. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

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.

PSY 285 Psychology Seminar and Practicum
Designed for psychology majors, the class consists of two hour weekly seminar and a practicum placement in the community (60 hours). The seminar will focus on career paths in psychology at both the undergraduate and graduate levels, research methods, and professional writing and presentation skills. Highly recommended: MTH 243 Prerequisites: PSY 201 or 201A and PSY 202 or 202A. Prerequisite Concurrent: WR 122.

PSY 289 Independent Study: Psychology
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.

RELIGION
R 210 World Religions
General survey course that examines the major religions of the world, including Hinduism, Buddhism, Chinese religions, Christianity, Judaism and Islam. Attention is given to their history, myths and doctrines, rituals and traditions, and social and personal ethics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

RADIOGRAPHY
RAD 100 Introduction to Radiology
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
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
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
Basic positioning techniques used in radiography of the bony thorax, spinal column and pelvic girdle. Lab includes peer positioning, film critique, anatomical identification, pathologies and an energized section using phantoms. Department permission required. Prerequisite: RAD 102.
RAD 105 Methods of Patient Care 3 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 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 Covers generators, timers, x-ray tubes, recording devices, physiology of sight, image intensifiers, television camera/monitors, digital radiography, mobile radiography and fluorescent equipment, tomography and teleradiography. Department permission required. Prerequisite: RAD 106.

RAD 107C Principles of Fluoroscopy 1 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. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required.

RAD 110 Radiographic Clinic I 4 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.

RAD 115 Principles of Exposure I 3 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 4.5 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, recordkeeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 110.


RAD 130 Radiographic Clinic III 4.5 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, recordkeeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 107.

RAD 132 Radiographic Image Production 3 Introduces theory and practical application of film/screen systems, sensitometry, image formation, automatic film processing, subtraction/duplication, computed radiography and quality assurance. Lab includes using test tools with energized equipment. Department permission required. Prerequisite: RAD 120.

RAD 140 Radiographic Clinic IV 10 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, recordkeeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 115.

RAD 203 Applied Radiography Topics 2 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 biotechnical 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 Covers basic positioning of the skull, paranasal 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 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 Covers contrast media, fluoroscopic 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 105.

RAD 210 Radiographic Clinic V 6.5 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, recordkeeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 140.

RAD 211 Advanced Imaging Modalities 4 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 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 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 6.5 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 210.

RAD 223 Radiographic Clinic VII 9 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, recordkeeping, and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 220.

RAD 240 Radiographic Clinic VIII 7 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 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 Introduces the normal appearance of anatomical structures in normal 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
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 285 Imaging for Pathology 1 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 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 Instruction in vocabulary, dictionary use, motor skills, comprehension, some study skills. Prerequisite: ABE 0783 or placement into RD 80.

RD 80A Reading 80A 3 Topics include vocabulary, dictionary use, motor skills, comprehension, reading rate improvement, and study skills. Prerequisite: ABE 0783 or placement into RD 80.

RD 81A Reading 81A 1 Focuses on instruction in vocabulary, study skills, and dictionary use. Prerequisite: ABE 0783 or placement into RD 80.

RD 82A Reading 82A 2 Focuses on instruction in vocabulary, comprehension, study skills, and dictionary use. Prerequisite: ABE 0783 or placement into RD 80.

RD 90 Reading 90 3 Instruction in reading improvement through work on vocabulary development, motor skills, comprehension and some reading rate improvement. Prerequisite: Placement into RD 90 or successful completion of RD 80.

RD 90A Reading 90A 3 Reading improvement through work on vocabulary development, motor skills, comprehension and reading rate. Prerequisite: RD 80.

RD 91A Reading 91A 1 Focuses on reading effectiveness. Comprehension strategies, vocabulary development, and reading rate are emphasized.

RD 92A Reading 92A 2 Focuses on reading effectiveness. Comprehension strategies, vocabulary development, and reading rate are emphasized. Prerequisite: Placement into RD 90 or successful completion of RD 80.

RD 95 Reading for Enjoyment 3 Helps students develop their abilities to read, understand, and enjoy literature. Prerequisite: Placement into RD 90 or instructor permission.

RD 115 College Reading 4 Focuses on expanding reading frequency and effectively reading complex college level texts. Comprehension strategies, critical reading and thinking skills, information literacy, vocabulary development, student success strategies and adapting reading rate to different reading tasks are emphasized. Prerequisite: RD 90 or equivalent placement test score; OR ESOL 254 and ESOL 260.

RD 116 College Vocabulary Development 3 Adding significantly to students’ reading, writing, and speaking vocabularies, fosters interest in words, and offers strategies for continuous vocabulary development throughout life. Prerequisite: Placement into RD 115 or successful completion of RD 90.

RD 117 Advanced College Reading 3 Further exploration of topics covered in RD 115, emphasizing inferential, critical, and technical reading. Prerequisite: Successful completion of RD 115.

REAL ESTATE

RE 100 Introduction to Real Estate 3 Real estate brokerage, appraisal, escrow, and management. Focuses on those aspects of the real estate industry and provides basic information for choosing real estate as a career.

RE 110 Real Estate Practices 3 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.

RE 112 Real Estate Law 3 Introduces the laws affecting real estate ownership and the transfer of real estate ownership. Satisfies Oregon Real Estate Broker pre-licensing requirements.

RE 114 Real Estate Agency Law 2 Topics covered are common law and statutory law aspects of agency. Satisfies Oregon Real Estate Broker pre-licensing requirements.

RE 116 Real Estate Finance 3 Methods for financing the acquisition and transfer of real property. Emphasizes the mortgage market, lending instruments, foreclosures and remedies, governmental loan programs, private loan programs, loan applications, appraisals and closings. Satisfies Oregon Real Estate pre-licensing requirements.

RE 118 Real Estate Brokerage 2 Topics include advertising, financial records, regulatory requirements for real estate offices, escrow, office manuals, and other topics. Satisfies Oregon Real Estate Broker pre-licensing requirements.

RE 126 Real Estate Contracts 2 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.

RE 130 Real Estate Advanced Practices 3 Satisfies the Oregon Real Estate Agency post-license requirement to complete an advanced course related to the practice of real estate prior to their first renewal of their license.

RE 140 Real Estate Broker Property Management 1 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.

RE 210 Real Estate Appraisal-Foundations 3 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. Meets State of Oregon requirements for licensing/certification.

RE 211 Real Estate Appraisal-Single Family Residences 3 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.

RE 212 Real Estate Appraisal - USPAP 2 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.

RE 226 Real Estate Investments - Advanced 3 Introduces more sophisticated and complex real estate finance and investments concepts.

RE 241 RE Brokerage Administration and Sales Supervision 4 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.

RE 250 Real Estate Investments I 3 Introduces various aspects of personal real estate investments. Discusses basic strategies of real estate investment, including the relationship between risk and return. Introduces important considerations for potential investors when purchasing, holding and selling investment property.

RE 252 Real Estate Property Management 6 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.

RUSSIAN

RUS 101 First Year Russian 4 Emphasizes active communication in beginning Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners.

RUS 102 First Year Russian 4 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.

RUS 103 First Year Russian 4 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.

RUS 111C First Year Russian Conversation 1 Continues to practice structures and vocabulary presented in RUS 150 in a conversational format. Recommended: Enrollment in RUS 150.

RUS 113A First Year Russian Conversation 3 Reviews structures and vocabulary presented in first year Russian. Special emphasis on conversational skills. Recommended: Completion of RUS 103, 151, or instructor permission.

RUS 150 First Year Russian 6 For beginners. Emphasizes active communication in beginning Russian. Includes listening, speaking, reading, writing, pronuncia-
tion, structure, vocabulary and culture. Recommended: Enrollment in RUS 111C when offered.

RUS 151 First Year Russian 6 Continues the work of RUS 150. Emphasizes active communication in Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of RUS 150 or instructor permission. Recommended: Enrollment in RUS 111C when offered.

RUS 201 Second Year Russian 5 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.

RUS 202 Second Year Russian 5 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.

RUS 203 Second Year Russian 5 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.

RUS 211B Intermediate Russian Conversation 2 Emphasizes conversational skills and listening comprehension at the second-year level. Recommended: Completion of first year Russian at college level or instructor permission.

RUS 213A Intermediate Russian Conversation 3 Emphasizes conversational skills and listening comprehension at the second-year level. Recommended: Completion of RUS 202 or instructor permission.

RUS 241 Great Russian Writers 4 Introduction to Russian literature's greats writers including Pushkin, Lermontov, Gogol, Dostoyskii, Tolstoy, Zoschenko, 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.

RUS 260B Russian Culture 2 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.

RUS 261B Russian Culture 2 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.

RUS 270A Readings in Russian 3 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.

RUS 270B Readings in Russian 2 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.

SOC 204 General Sociology: Sociology in Everyday Life 4 Introduces the sociological perspective and sociology as a scientific discipline. Focuses on individuals and groups and how they are shaped by their social locations (status, roles, race, class, gender, age, etc.), society's structures, stratification, institutions, groups and organizations and by such cultural processes as socialization and group interaction. Prerequisite: RD 115 or equivalent placement test scores.

SOC 205 General Sociology: Social Change & Social Institutions 4 Explores various social institutions (family, economy, politi, and religion) from a social change perspective. Various theories of social organization and social change are compared and contrasted. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

SOC 206 General Sociology: Social Problems 4 Applies the sociological frame of reference to the study of social problems, their identification, analysis of causes and possible solutions. Problems explored may include mental disorders, drug and alcohol addiction, crime and delinquency, group discrimination, inequality, poverty, alienation, domestic and international violence, environment and energy. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 211 Peace and Conflict 4 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 conflicts are considered. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

SOC 213 General Sociology: Diversity in the United States 4 Examines a variety of topics such as race and ethnicity, gender, age, sexual orientation, social class, and related issues and concepts from a number of sociological perspectives. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 214A Illumination Project: Tools for Creative Social Activism I 4 This is the first of a three-term sequence designed to address issues of institutional oppression through classroom and community presentations utilizing interactive theater. Provides skills in the area of social analysis, group facilitation, social change interventions, creative production and basic acting. This course requires Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 214B Illumination Project: Tools for Creative Social Activism II 4 This is the second of a three-term sequence designed to address issues of institutional oppression through classroom and community presentations utilizing interactive theater. Provides skills in the area of social analysis, group facilitation, social change interventions, creative production and basic acting. Prerequisites: SOC 214A and its prerequisite requirements and instructor permission.

SOC 214C Illumination Project: Tools for Creative Social Activism III 4 This is the third of a three-term sequence designed to address issues of institutional oppression through classroom and community presentations utilizing interactive theater. Provides skills in the area of social analysis, group facilitation, social change interventions, creative production and basic acting. Prerequisites: SOC 214A and SOC 214B and their prerequisite requirements and instructor permission.

SOC 215 Global Studies: Social Issues and Movements 4 Explores social issues and movements from a global perspective. Examines the impact of social change and cultural contact on individuals and social structure and focuses on organized social responses to social problems, utilizing a multicultural, multidisciplinary approach. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 218 Sociology of Gender 4 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.

SOC 219 Religion & Culture: Social Dimensions 3 Explores the relationship between culture, social structure, and religion, through a comparative and cross-cultural examination of religious beliefs, practices, and organization.

SOC 223 Social Gerontology/Sociology of Aging 4 Examines the impact of social and sociocultural conditions on the process of aging and the social consequences of this process. Also explores the aging process through a life-course perspective and adopts a social problems approach to aging and related issues. Recommended: SOC 204 or 206, or instructor permission. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

SOC 225 Introduction to Environmental Sociology 4 Examines the relationship between society and the environment. The industrialization of society and our increasing demand for natural resources has significantly impacted the earth's ability to meet the needs of humanity and other species. Explores the causes and consequences of such topics as population, consumption, development, pollution, public policy, and environmental justice. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 230 Introduction to Gerontology 4 Introduces the current theories, policies, and practices in gerontology and professional opportunities in the field. Addresses the concerns of practitioners and focuses on service delivery and policy directions. Recommended: SOC 204 or 205, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 231 Sociology of Health & Aging 4 Portland Community College • 2010–2011 257
Provides an introduction to age related health issues in social and cultural context. Topics include the social structuring of age, health and illness; demographics and patterns of health and illness of 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.

SOC 232 Death and Dying: Culture and Issues 4 Introduces the student to the institution of death in the United States. From a sociological frame of reference, the student will study death as a system for dealing with the social processes of dying, death, and bereavement. Recommended: SOC 204, 205, or instructor permission. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SOC 234 Death: Crosscultural Perspectives 4 An interdisciplinary study of the crosscultural 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 contemporary perspectives on mortality. ATH 234 and SOC 234 cannot both be taken for credit. Recommended: A prior course in Anthropology or Sociology.

SOC 280A Cooperative Education: Sociology 4 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 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.

SP 100 Introduction to Speech Communication 4 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.

SP 101 Oral Communication Skills 3 Improve listening and speaking skills. Includes oral reports, conference procedures and everyday conversation.

SP 105 Listening 4 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.

SP 110 Voice and Articulation 3 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.

SP 111 Public Speaking 4 Introduction to speech-making 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.

SP 111H Public Speaking: Honors 4 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.

SP 112 Persuasion, Argumentation and Debate 4 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.

SP 130 Business and Professional Speech Communication 4 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 score.

SP 140 Introduction to Intercultural Communication 4 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.

SP 212 Voice and Diction 4 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.

SP 214 Interpersonal Communication: Process & Theory 4 Study of interpersonal communication in different contexts; focuses on message exchange in person-to-person interactions, emphasizing theoretical principles and their application. Concentration is in the development of various communication skills in interpersonal contexts. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

SP 215 Small Group Communication: Process and Theory 4 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.

SP 227 Nonverbal Communication 4 Studies the nonverbal aspect of communication as related to verbal communication. Emphasis is on the theories and types of nonverbal behavior. Consideration is given to the influence of such factors 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.

SP 228 Mass Communication 4 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.

SP 237 Gender and Communication 4 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.

SP 270 Forensics: Speech and Debate 3 Development of public communication skills by representing the college in intercollegiate competition. Designed to improve skills in reasoning and public communication.

SP 270B Projects in Public Speaking 2 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.

SPA 101 First Year Spanish - First Term 4 Beginning communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA 102</td>
<td>First Year Spanish - First Term 4</td>
<td>Active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Simultaneous enrollment in SPA 112C. Successful completion of SPA 101 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 103</td>
<td>First Year Spanish - Third Term 4</td>
<td>Active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Simultaneous enrollment in SPA 113C. Successful completion of SPA 102 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 111A</td>
<td>First Year Spanish Conversation 3</td>
<td>Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: First year Spanish at the college level or instructor permission.</td>
</tr>
<tr>
<td>SPA 111C</td>
<td>First Year Spanish Conversation 1</td>
<td>Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: Simultaneous enrollment in SPA 101 or instructor permission.</td>
</tr>
<tr>
<td>SPA 112B</td>
<td>First Year Spanish Conversation 2</td>
<td>Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: First year Spanish at the college level or instructor permission.</td>
</tr>
<tr>
<td>SPA 112C</td>
<td>First Year Spanish Conversation 1</td>
<td>Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended: Simultaneous enrollment in SPA 102 or instructor permission.</td>
</tr>
<tr>
<td>SPA 113A</td>
<td>First Year Spanish Conversation 3</td>
<td>Continuation of SPA 112A. Recommended: First year Spanish at the college level or instructor permission.</td>
</tr>
<tr>
<td>SPA 113B</td>
<td>First Year Spanish Conversation 2</td>
<td>Continuation of SPA 112B. Recommended: First year Spanish at the college level or instructor permission.</td>
</tr>
<tr>
<td>SPA 113C</td>
<td>First Year Spanish Conversation 1</td>
<td>Continuation of SPA 112C. Recommended: Simultaneous enrollment in SPA 103 or instructor permission.</td>
</tr>
<tr>
<td>SPA 150</td>
<td>First Year Spanish 6</td>
<td>Emphasizes active communication in 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.</td>
</tr>
<tr>
<td>SPA 151</td>
<td>First Year Spanish 6</td>
<td>Increases vocabulary and proficiency in the present, past and future tenses, and the command of verb forms. Engage in and initiate Spanish dialogue. Recommended: SPA 150 or completion of at least two years of recent high school Spanish. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 201</td>
<td>Second Year Spanish - First Term 4</td>
<td>Reviews and expands the use of basic vocabulary, structural patterns, indicative tenses and commands from first-year college Spanish. Listen, speak, write and read in Spanish. Recommended: Simultaneous enrollment in SPA 211. SPA 151, 103, or instructor permission required. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 202</td>
<td>Second Year Spanish - Second Term 4</td>
<td>Practice and expand vocabulary and structures. Emphasizes subjunctive tenses to express personal feelings, doubts and opinions in Spanish. Recommended: Simultaneous enrollment in SPA 212. Successful completion of SPA 201 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 203</td>
<td>Second Year Spanish - Third Term 4</td>
<td>Practice and expand vocabulary and subjunctive patterns. Listen, speak, read, write and begin to sense the culture in the idiom. Recommended: Simultaneous enrollment in SPA 213. Successful completion of SPA 202 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 211B</td>
<td>Intermediate Spanish Conversation 2</td>
<td>Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in SPA 201 or instructor permission.</td>
</tr>
<tr>
<td>SPA 211C</td>
<td>Intermediate Spanish Conversation 1</td>
<td>Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in SPA 201 or instructor permission.</td>
</tr>
<tr>
<td>SPA 212C</td>
<td>Intermediate Spanish Conversation 2</td>
<td>Continuation of SPA 211C. Recommended: Simultaneous enrollment in SPA 202. Completion of SPA 201 or equivalent also recommended.</td>
</tr>
<tr>
<td>SPA 213A</td>
<td>Intermediate Spanish Conversation 3</td>
<td>Continuation of SPA 212. Recommended: Completion of or simultaneous enrollment in SPA 203 or instructor permission.</td>
</tr>
<tr>
<td>SPA 213B</td>
<td>Intermediate Spanish Conversation 2</td>
<td>Continuation of SPA 212C. Recommended: Simultaneous enrollment in SPA 203 or instructor permission.</td>
</tr>
<tr>
<td>SPA 217</td>
<td>Reading &amp; Writing for Experienced Speakers of Spanish 3</td>
<td>Part of a three-course sequence to be taken in any order. Improve experienced speaker of Spanish skills in spelling, grammar, reading, composition and translation. Recommended: Experienced speaker of Spanish who can read and write.</td>
</tr>
<tr>
<td>SPA 218</td>
<td>Reading &amp; Writing for Experienced Speakers of Spanish 3</td>
<td>Part of a three-course sequence to be taken in any order. Improve experienced speaker of Spanish skills in spelling, grammar, reading, composition and translation. Recommended: Experienced speaker of Spanish who can read and write.</td>
</tr>
<tr>
<td>SPA 219</td>
<td>Reading &amp; Writing for Experienced Speakers of Spanish 3</td>
<td>Part of a three-course sequence to be taken in any order. Improve experienced speaker of Spanish skills in spelling, grammar, reading, composition and translation. Recommended: Experienced speaker of Spanish who can read and write.</td>
</tr>
<tr>
<td>SPA 221</td>
<td>Reading &amp; Writing for Experienced Speakers of Spanish 3</td>
<td>Part of a three-course sequence to be taken in any order. Improve experienced speaker of Spanish skills in spelling, grammar, reading, composition and translation. Recommended: Experienced speaker of Spanish who can read and write.</td>
</tr>
<tr>
<td>SPA 250</td>
<td>Second Year Spanish 6</td>
<td>Develop and practice language competence and proficiency by reinforcing all basic structures and expanding vocabulary of first year Spanish. Emphasizes understanding, speaking, reading and writing. Recommended: Completion of first year college Spanish or three or more years of recent high school Spanish, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 251</td>
<td>Second Year Spanish 6</td>
<td>Develop and practice communicative competence and proficiency. Emphasizes proper use of the subjunctive to understand and express personal feelings and thoughts. Focuses on various dimensions of Hispanic culture. Recommended: Completion of SPA 250 or four or more years of recent high school Spanish or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 260A</td>
<td>Spanish Culture 3</td>
<td>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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.</td>
</tr>
<tr>
<td>SPA 260C</td>
<td>Spanish Culture 1</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 261B</td>
<td>Spanish Culture 2</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 261C</td>
<td>Spanish Culture 1</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 262A</td>
<td>Spanish Culture 3</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 270A</td>
<td>Readings in Spanish Literature (Hispanic) 3</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 271A</td>
<td>Readings in Spanish Literature (Women Writers) 3</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 272A</td>
<td>Readings in Spanish Literature (Spain) 3</td>
<td>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.</td>
</tr>
<tr>
<td>SPA 290A</td>
<td>Spanish Composition 3</td>
<td>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.</td>
</tr>
</tbody>
</table>
Course Descriptions

THEATRE ARTS

TA 101 Theatre Appreciation 4 This course exposes students to several live theatrical productions in the Portland area with the purpose of enriching the understanding and appreciation of the theatrical event. Students will attend productions, write critiques and learn to appreciate the production from the viewpoints of the actors, directors, playwrights, designers and audience. Also, a brief history of the theatre is covered. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

TA 111 Fundamentals of Technical Theatre 4 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.

TA 112 Introduction to Set Design 4 Covers elements of technical theater 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.

TA 113 Introduction to Stage Lighting 4 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.

TA 116 Stagecraft 3 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.

TA 141 Fundamentals of Acting Techniques 4 Explores the actor's resources to develop physical and vocal expressiveness providing insight to the process of dramatic characterization and "believability" in a role. Includes two hours of group activity and two hours of lab time. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

TA 142 Fundamentals of Acting Techniques 4 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.

TA 143 Fundamentals of Acting Techniques 4 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.

TA 144 Improvisational Theatre 3 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.

TA 147 Voice and Diction for the Theatre 3 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.

TA 148 Movement for the Stage 3 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.

TA 180A Theatre Rehearsal and Performance 1 Credit for performance in theatre production, if cast. Gain first-hand experience in performance techniques. Audition required.

TA 180B Theatre Rehearsal and Performance 2 Performance in theatre production. Audition required.

TA 180C Theatre Rehearsal and Performance 3 Performance in theatre production. Audition required.


TA 190A Projects in Theatre 1 Design an independent project associated with the theatre. Develop a contract with a theatre arts instructor covering the course content. May be repeated.

TA 190B Projects in Theatre 2 Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated.

TA 190C Projects in Theatre 3 Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated.

TA 227 Stage Make-up 3 Techniques of applying stage make-up including use of tools and products. Focuses on analyzing the character and theatre to create the best make-up for various roles on any given stage. Class time is divided into lecture and student make-up projects.

TA 241 Intermediate Acting Technique 4 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.

TA 242 Intermediate Acting Technique 4 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.

TA 243 Intermediate Acting Technique 4 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.

TA 244 Advanced Improvisation 3 This class emphasizes the development of improvisational acting skills for sustained narrative and long-form of improvisational theatre. 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

TA 253B Theatre Rehearsal and Performance 2 Performance in a play. May be repeated. Prerequisite: Audition.

VETERINARY TECHNOLOGY

VT 100 Veterinary Medical Terminology 2 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 Covers the job of the veterinary technician. This will illustrate that the course work is both practical and necessary. Program admission required.

VT 102 Animal Nursing and Restraint 3 Teach-
es nursing techniques and principles of restraint of dogs, cats, horses, cattle, sheep, birds and laboratory animals. Emphasizes techniques to maximize the safety aspect of restraint to both the handler and to the animal patient. Program admission required. Prerequisite: VT 101.

**VT 103 Animal Health Record Systems 3** An introduction to veterinary medical records, admitting procedures, history taking, record maintenance for both in- and out patient, and kennel records. Includes follow-up and discharge procedures on filing and record retention. Covers using the computer in veterinary medicine.

**VT 105 Comparative Veterinary Anatomy and Physiology I 4** Covers the form and function of animal bodies and their anatomical and physiological differences between selected species are studied. Lab includes skeletons and cadaver specimens. Focuses on microscopic anatomy and anatomy and physiology of bones, muscles, and skin. Program admission required. Prerequisites: VT 121; (BI 101 or BI 101B); CH 100.

**VT 106 Comparative Veterinary Anatomy and Physiology II 4** Covers the form and function of animal bodies and their anatomical and physiological differences between selected species are studied. Lab includes skeletons and cadaver specimens. Focuses on anatomy and physiology of the digestive, nervous, urinary, reproductive, and endocrine system. Includes organs of special sense. Prerequisite: VT 105.

**VT 107 Veterinary Parasitology and Pathology 3** Introduces life cycles, modes of transmission, geographical distribution, and diseases associated with each parasite. Lab includes identification of parasites using prepared slides and collected specimens. Students will be able to recognize terms and processes involved in veterinary pathology, means and processes that result in disease, types of cells and tissues, and recognize signs of inflammation. Prerequisites: BI 101, BI 102 or BI 112.

**VT 108 Pharmaceutical Mathematics I 1** Introduces mathematics as applied to pharmacology. Includes unit conversions, solutions and percentage calculations, and drug dosage calculations. Program admission required.

**VT 109 Radiation Safety 2** Introduces x-radiation and safety principles involved in using of x-ray machines. Program or current employment in a veterinary hospital or clinic doing x-ray work is required.

**VT 110 Specimen Collection Laboratory 1** Covers collection techniques used on both large and small animals and skills needed to obtain the specimens required for analysis in clinical laboratories. Prerequisites: VT 105; (BI 101 or BI 101B); BI 102; CH 100.

**VT 111 Hematology and Urinalysis 5** Develops the knowledge and skills necessary to perform 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** 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** 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** 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** 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** 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 202 Surgical Nursing and Lab Animal Procedures 4** Covers surgical preparations of the patient, surgical monitoring, surgical assistance, pre-operative and post-operative animal care, instrument sterilization methods, instrument identification, and the veterinary technicians role in special surgical procedures. Also includes laboratory animal diseases and procedures. Prerequisite: VT 201.

**VT 203 Veterinary Procedures Seminar 3** 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** 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 207 Public Health and Sanitation 2** 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** Covers important diseases and disease processes occurring in small animals. 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** 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** 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** Continues mathematics as applied to pharmacology from Pharmaceutical Mathematics I. Includes a review of drug dosage calculations and solutions and percentages, 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** Develops career objectives by linking their PCC 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** Develops career objectives by linking their PCC 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 280C Cooperative Education: Clinic III 4** Develops career objectives by linking their PCC 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.

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**WELDING**

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WLD 101 Welding Processes & Applications 4
Covers welding processes, safety, equipment, and essential variables of operation.

WLD 102 Blueprint Reading 4
Covers the language of blueprints including lines, views, dimensioning, print organization, welding symbols and structural shapes.

WLD 111 Shielded Metal Arc Welding (E7018) and Oxy-acetylene Cutting 4
Covers uses, safety, nomenclature, equipment operation, set-up and shutdown procedures and welding related math and science for S.M.A.W. and O.A.C. Department permission required.

WLD 112 Shielded Metal Arc Welding: Mild Steel I (E7018) 4
Develops knowledge and manipulative skills in the use of E7018 mild steel electrodes when performing various welds in the flat and horizontal positions. Welding applied math and science included. Department permission required.

WLD 113 Shielded Metal Arc Welding: Mild Steel II (E7018) 4
Develops knowledge and manipulative skills in the use of E7018 mild steel electrodes when performing various welds in the vertical and overhead positions. Welding applied math and science included. Department permission required.

WLD 114 Shielded Metal Arc Welding: Mild Steel III (E6011) 3
Develops knowledge and manipulative skills in the use of E6011 mild steel electrodes when performing various welds in the flat, horizontal and vertical positions. Department permission required.

WLD 115 Shielded Metal Arc Welding: Mild Steel IV (E6011) 3
Develops knowledge and manipulative skills in the use of E6011 mild steel electrodes when performing various welds in the vertical and overhead positions. Department permission required.

WLD 131 Gas Metal Arc Welding 3
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.

WLD 132 Gas Metal Arc Welding-Pulse 3
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.

WLD 136A Beginning Wire Welding 3
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.

WLD 136B Basic Wire Welding 3
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.

WLD 141 Flux-Cored Arc Welding I (Gas Shielded) 3
Develops knowledge and manipulative skills in the shielded flux-cored arc welding process in the flat, vertical, horizontal and overhead positions. Department permission required.

WLD 142 Flux-Cored Arc Welding II (Self Shielded) 3
Develops knowledge and manipulative skills in the self-shielding arc welding process in the flat, vertical, horizontal and overhead positions. Department permission required.

WLD 146A Beginning Pipe Welding Practice 3
Introduces joining pipe per ASME Section IX and industry standards. First class in a four course sequence.

WLD 146B Basic Pipe Welding Practice 3
Introduces joining pipe in the 2G position per ASME Section IX Welding Code. Second class in a four course sequence.

WLD 151 SMAW Certification Practice: Unlimited Thickness Mild Steel 3
Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Department permission required.

WLD 152 Wire Welding Certification Practice 6
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.

WLD 156A Beginning Oxy-Acetylene Welding Practice 3
Introduces the joining of plate using oxy-fuel welding. First class in a four course sequence.

WLD 156B Basic Oxy-Acetylene Welding Practice 3
Introduces the joining of plate using oxy-fuel welding. Second class in a four course sequence.

WLD 166A Beginning Weld Practice Metal Sculpting 3
Introduces 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.

WLD 166B Basic Weld Practice Metal Sculpting 3
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.

WLD 176A Beginning Fabrication Welding Practice 3
Introduces beginning fabrication of welded structures. First class in a four course sequence.

WLD 176B Basic Fabrication Welding Practice 3
Introduction to basic fabrication of welded structures. Develops foundational skills required for advancement. Second class in a three course sequence.

WLD 186A Beginning Certification Welding Practice 3
Introduces preparing and joining plates for certification as per AWSD1.1 Structural Steel Welding codes. First class in a four course sequence.

WLD 186B Basic Certification Welding Practice 3
Introduces preparing and joining plates in the 2G position for certification as per AWSD1.1 Structural Steel Welding codes. Second class in a four course sequence.

WLD 190A Beginning Welding Practice 1
Introduces welding and industry standards. Develops foundational skills required for advancement in future coursework. First class in a three course sequence.

WLD 190B Basic Welding Practice 2
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.

WLD 190C Intermediate Welding Practice 3
Introduction to the fillet weld in the 3F and 4F position to build the skills required to successfully certify in accordance with AWS D1.1 Welding Code. This class in a three course sequence.

WLD 203 Structural Steel Welding Code & Standards 4
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.

WLD 210 Aviation Welding 2
Develop 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 80 or higher; AMT 101 with a “C” or higher.

WLD 211 Auto Collision Repair Welding Aluminum 2
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.

WLD 216 Miscellaneous Electrodes & Advanced Positions 3
Develops knowledge and manipulative skills in the use of a variety of electrodes when welding complex joints and welding positions. Department permission required.

WLD 217 Diesel Welding 3

WLD 221 Gas Tungsten Arc Welding Mild Steel 3
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.

WLD 222 Gas Tungsten Arc Welding: Aluminum 3
Develops knowledge and manipulative skills while welding common joints in all positions on aluminum with the G.T.A.W. process. Department permission required.

WLD 223 Gas Tungsten Arc Welding: Stainless Steel 3
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.

WLD 224 Gas Tungsten Arc Welding: (Mild Steel) Pipe 3
Develops knowledge and manipulative skills required to weld mild steel pipe in all positions using the G.T.A.W. process. Department permission required.
WLD 225 Gas Tungsten Arc Welding: (Mild Steel) Pipe II 3 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.

WLD 236A Intermediate Wire Welding 3 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.

WLD 236B Advanced Wire Welding 3 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.

WLD 246A Intermediate Pipe Welding Practice 3 Introduces joining pipe in the 6G position per ASME Section IX Welding Code. Third class in a four course sequence.

WLD 246B Advanced Pipe Welding Practice 3 Introduces joining pipe in the 5G position per ASME Section IX Welding Code. Fourth class in a four course sequence.

WLD 253 SMAW Certification Practice 3/8” Mild Steel (E6011) 3 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.

WLD 254 SMAW Certification Practice 3/8” Mild Steel (E7018) 3 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.

WLD 256 Preparation for Pipe Certification I 3 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.

WLD 256A Intermediate Oxy-Acetylene Welding Practice 3 Introduces the joining of plate using oxy-fuel welding. Third class in a four course sequence.

WLD 256B Advanced Oxy-Acetylene Welding Practice 3 Introduces the advanced joining techniques of plate using oxy-fuel welding. Fourth class in a four course sequence.

WLD 257 Preparation for Pipe Certification II 3 Practice for pipe certification using the S.M.A.W. process to weld pipes in all positions. Department permission required.

WLD 261 Basic Fabrication I 6 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.

WLD 262 Basic Fabrication II 6 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.

WLD 263 Welding Technology - Capstone 6 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.

WLD 266A Intermediate Weld Practice Metal Sculpting 3 Focuses on producing code quality metal sculptures. Introduces AWSD1.1 welding code and visual inspection techniques. Third class in a four course sequence.

WLD 271 Oxy-acetylene Welding Projects 3 Practice hand coordination and controlling heat while welding steel with oxy-acetylene equipment using all positions. Department permission required.

WLD 276A Intermediate Fabrication Welding Practice 3 Introduces intermediate fabrication of welded structures. Develops advanced skills as required for industry. Third class in a four course sequence.

WLD 276B Advanced Fabrication Welding Practice 3 Introduces advanced fabrication of welded structures. Develops advanced skills as required for industry. Fourth class in a four course sequence.

WLD 280A Cooperative Education: Welding 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.

WLD 280B Cooperative Education: Welding - Seminar 1 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.

WLD 286A Intermediate Certification Welding Practice 3 Introduces preparing and joining plates in the 3G position for certification as per AWSD1.1 Structural Steel Welding codes. Third class in a four course sequence.

WLD 286B Advanced Certification Welding Practice 3 Introduces preparing and joining plates in the 4G position for certification as per AWSD1.1 Structural Steel Welding codes. Fourth class in a four course sequence.

WLD 290 Submerged Arc Welding 2 Develops knowledge and skills with the submerged arc welding process. Department permission required.

WLD 295 Sculpture Welding II 4 Develops the artists’ 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.

WLD 9903 Welding Practice 1.5 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9910 Shielded Metal Arc Welding (Stick) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9911 Shielded Metal Arc Welding (Stick) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9912 Shielded Metal Arc Welding (Stick) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9913 Shielded Metal Arc Welding (Stick) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9920 Gas Tungsten Arc Welding (Helical) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9921 Gas Tung Arc Welding (Helialc) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9922 Gas Tung Arc Welding (Helialc) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9923 Gas Tung Arc Welding (Helialc) 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WLD 9963 Welding Practice for Metal Sculpting 3 Covers personal safety, shop safety, and learning objectives agreed upon by the instructor and the student. Upgrade and develop welding skills as needed. Department permission required.

WR 80 Writing 80 3 Instruction includes basic communication skills, language mechanics, grammar, spelling, sentence structure and paragraph development. Prerequisite: Placement into WR 80 and RD 80.

WR 80C Writing 80C 3 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).

WR 90 Writing 90 3 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.

WR 90C Writing 90C 3 Includes instruction in grammar, punctuation, sentence structure, essay development, and critical thinking skills. Improves basic writing skills by
WR 115 Introduction to Expository Writing 4
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).

WR 117 Introduction to Technical Writing 3
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.

WR 121 English Composition 4
Develops skills in analytical reading, critical thinking, and expository and persuasive writing. Students compose several essays using 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.

WR 121H English Composition: Honors 4
This is the Honors version of English Composition, which develops skills in analytical reading, critical thinking, and expository and persuasive writing. Students compose several essays using 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.

WR 122 English Composition 4
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. Prerequisite: WR 121.

WR 122H English Composition: Honors 4
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.

WR 123 English Composition 3
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.

WR 180 Composition Conferencing and Tutoring 1
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 FCC Writing Center.

WR 185 English Language: Theory and Practice 3
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.

WR 222 Writing Research Papers 4
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 via library catalogs, professional databases and other forms of re search. 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.

WR 227 Technical and Professional Writing 1
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.

WR 240 Creative Writing - Nonfiction 4
Focuses on creative nonfiction and writing essays which use creative writing techniques, such as nature writing, reviews, satire, personal essays, and literary journalism. Evaluates students' compositions in class discussion. Recommended: WR 122. Prerequisite: WR 121.

WR 241 Creative Writing - Fiction 4
Focuses on writing and submitting fiction for class discussion and analysis in a workshop setting. Study established writers for techniques, structures, and styles. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

WR 242 Creative Writing - Poetry 4
Focuses on writing and submitting poetry for class discussion and analysis in a workshop setting. Study established poets for techniques, structures, and styles. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

WR 243 Creative Writing - Script Writing 4
Focuses on writing and submitting the screenplay for class discussion and analysis. Study established writers for techniques, structures, and styles. Prerequisites: WR 115 and RD 115 or equivalent placement test scores.

WR 244 Advanced Creative Writing - Fiction 4
Focuses on continuing to apply the techniques and structures of fiction writing introduced in WR 241. Write fiction, and have work critiqued by peers and instructor, and critique the work of others in a workshop setting. Students without WR 241 may enter the class with instructor permission. Prerequisite: WR 241 and its prerequisite requirements.

WR 245 Advanced Creative Writing - Poetry 4
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.

WR 246 Advanced Creative Writing, Editing & Publishing 4
Emphasizes development of craft in students' writing while introducing basics of editing others' manuscripts and preparing them for publication in a variety of forms, including an annual student literary magazine. Prerequisite: Placement into WR 121 or WR 115 with a grade of C or better.

WR 247 Advanced Creative Writing - Scriptwriting 4
Focuses 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 techniques, structures, and styles. Includes lecture, small group activities, and conferences. Prerequisite: WR 243 and its prerequisite requirements; or instructor permission.

WR 248 Advanced Creative Writing - Nonfiction 4
This course extends the introduction of literary forms of creative nonfiction in WR 240. Presents the works of established writers for forms, techniques and styles as a context for the students' production of creative nonfiction for class discussion and analysis. Prerequisite: WR 240 and its prerequisite requirements.

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.

WR 9599 Professional Editing 3
Introduces different methods of editing. 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.

WR 9600 Technical and Professional Writing II 3
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.

WR 9601 Graphics for Technical and Professional Writers 3
Applies the graphics 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.

WOMEN’S STUDIES

WS 101 Women’s Studies 4
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.

WS 201 Women of the World 4
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.

WS 202 Women Working for Change: History, Theory and Practice 4
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 become effective change agents. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and WS 101.
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MA Mathematics, Ohio St U Main Campus, OH

Aditham, Revathi  
Treasury Analyst

Adler, Valerie E.  
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BS Applied Design, Portland State University, OR  
MS Educational Policy & Mgmt, Portland State University, OR

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BS Horticulture, Washington St University, WA

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BA History, Portland State University, OR  
MA History, Portland State University, OR

Anderson, Barry C.  
Instr/Biology  
BS Biology, Portland State University, OR  
MS Biology, Portland State University, OR  
PHD Environmental Sci Research, Portland St Univ, OR

Anderson, Clarice G.  
Instr/Fin Aid  
BS Elementary Education, Western Oregon University  
BS Elementary Education, Western Oregon University

Anderson, Kelly  
Accountant I  
AA General Studies, Portland Community College, OR

Andres, Mark S.  
Instr/Painting  
BA English, Williams C, MA

Annsa, Bethany  
Spec/Employment  
ASPR Political Science Salt Lake CC, UT  
BA Community Org & Development, Portland St U, OR

Anus, Michael E.  
Video Producer  
BS Anthropology, University of Oregon, OR  
MA Cultural Anthropology, Indiana U Bloomington, IN  
MFA Film & Video, U Iowa, IA

Apodaca, Danny J.  
Spec/Student Res  
AA General Education, Rio Hondo College, CA  
BA Psychology, Humboldt State University, CA

Apoteker, Alison M.  
Instr/Comp & Lit  
BA Communications, U Massachusetts-Amherst, MA  
MFA Creative Writing, U Arkansas Main Camp, AR

Argenti, Lynn S.  
Instr/Nursing  
BS Nursing, Sonoma State University, CA  
MS Nursing, San Jose State University, CA

Armontrout, David E.  
Instr/Social Science  
AA General Studies, El Camino College, CA  
BA History, UCLA Los Angeles, CA  
MA History, Portland State University, OR

Armstrong, Gayle D.  
Spec/Employment  
BA General Studies, U Colorado Denver, CO  
MA Psychology, U Colorado Denver, CO

Arnett, Adon C.  
Instr/Dev Ed/Engl  
BA English, Southern Utah University, UT  
MA English, New Mexico St U Main Camp, NM

Arnold, James M.  
System Analyst  
AS Computer Applications, Glenville St C, WV  
AS Computer Science, Glenville St C, WV  
BS Systems, U Charleston, WV

Arthur, Stephen  
Spec/Club and Programs  
BS Environmental Science, Oregon State University, OR

Atkinson, Jean M.  
Sup/Food Svcs  
BS Home Economics, CA Polytechnic State U, CA

Aytche, Sherri  
Spec/Mental Health Drug  
BS Sociology, SUNY C Brockport, NY  
MSE Counseling & Guidance, Long Island U  
Birkh Otr, NY

Backes, Gabriele R.  
Instr/Chem  
BS Chemistry, Ruhr Universitat Bochum  
MS Chemistry, Ruhr Universitat Bochum  
PHD Chemistry, Ruhr Universitat Bochum

Bada, Tyrone A.  
Coord/Records

Bader, Marilyn J.  
Mgr/Fin Aid Systems  
AS Accounting Clerk, Lane CC, OR  
BS Public Affairs, University of Oregon, OR  
MS Public Affairs, University of Oregon, OR

Barker, Dorothy A.  
Spec/Acad Advising  
BA Psychology, Seattle University, WA

Bailey, Christine Lee S.  
Coord/First Year Experience  
BA Social Science, Portland State University, OR  
MS Social Science, Portland State University, OR

Bailey, Joseph K.  
Instr/Mach Tech

Baird, Shannon J.  
Instr/Const Tech  
BARC Architecture, University of Oregon, OR  
MS Media Studies, New School University, NY

Bako, Maria M.  
Spec/Employment

Bales, Laura J.  
Mgr/Bookstores  
CERT Merchandising, Portland CC, OR  
AS Marketing, Portland CC, OR

Banks, Russell C.  
Mgr/Mktg Comm  
BJ Journalism, University of Texas Austin

Barajas, Everson, Sylvia  
Spec/Comm Resource  
BA Social Science, University of Portland, OR

Barmar, Farshad  
Instr/Math  
BS Electrical Engineer, Ohio University, OH  
MS Electrical Engineer, U of CA/ Santa Barbara,CA  
MS Mathematics, Portland State University, OR  
PHD Electrical Engineering, U of CA/ Santa Barbara, CA

Barnes, Robert W.  
Human Resource Rep  
BA Economics, U of California-Santa Barbara, CA

Barnes, Terri L.  
Instr/His  
AA Small Business Management, Mt Hood CC, OR  
BA Art History, Portland State University, OR  
MA History, Portland State University, OR

Barnes, Timothy C.  
Instr/Comp & Lit  
BA English, San Jose State University, CA  
MA English, Portland State University, OR

Barrett, Sarah A.  
Instr/ESOL  
BA Spanish, Seattle University, WA  
BA English, Seattle University, WA  
MA Teaching English to Others, Portland State Univ, OR
Barrick-Harwood, Glenna J.
Spec/Coop Ed/Stnt Employment
AA Mental Health, Mt Hood CC, OR
BA English, University of Oregon, OR
MS Ed Policy, Foundation & Admin, Portland St Univ, OR

Barringer, Jennifer T.
BA International Studies, University of Oregon, OR
BA French, University or Oregon, OR
MFA Public Administration, Monterey Inst Int’l Studies, CA

Barsky, Hillary W.
Instr/Vis Arts
BFA Fine & Applied Arts, University of Oregon, OR
MFA Ceramics, University of Oregon, OR

Bastian, Linda A.
Instr/Math
BS Mathematics, CUNY, NY
MS Mathematics Education, CUNY Queens, NY

Batazhan, Tatjana Y.
Mgr/Program III
BS Business Administration, Portland State University, OR
MA Business Administration, Portland State University, OR

Batchelor, Angela
Instr/Vis Arts
AA Art College of Southern Idaho, ID
BFA Visual Arts, Boise State University, ID
MFA Visual Arts, Boise State University, ID

Baynton, Susan A.
Mgr/Comp & Benefits
BS Business and Admin Studies, Lewis & Clark Coll, OR

Beach, Josette L.
Dir/Dental Prog
CERT Dental Assisting, Portland CC, OR
AS Dental Hygiene, Portland CC, OR
BS General Studies, Eastern Oregon University OR
MS Ed Policy, Foundation & Admin, Portland St Univ, OR

Beck, Esperanza
Spec/Student Res

Bedient, Sonya F.
Counselor
BA Psychology, Western Washington Univ, WA
MA Counseling Psychology, Lewis & Clark Coll, OR

Bekey, Ronald S.
Instr/Comp Application Systems
BS Biology, U of Southern California, CA
MS Entomology, Washington St University, WA
PHD Horticulture, Oregon State University, OR

Bellingher, Frank R.
Instr/Vis Arts
AA Art, College of DuPage, IL
BFA Ceramics, N Illinois U, IL
MA Studio Arts, N Illinois U, IL
MFA Art, N Illinois U, IL

Belt, Cheryl A.
Human Resource Rep
BA Public Administration, University of Oregon, OR

Bene, Michael J.
Instr/Art Prep/Bilingual
BA Linguistics, U of CA/Santa Cruz, CA
MA Linguistics, U of CA/Santa Cruz, CA

Benjamin, William
Spec/Fire Protection Tech Prog
BS Fire Science, Univ Central Missouri, MO
MS Industrial Safety, Univ Central Missouri, MO

Bennett, Grant T.
Managing Architect
BARC Architecture, University of Oregon, OR

Bennett, Kirk M.
Occu Cluster Trainer
BS Political Science, Portland State University, OR

Benting, Dianna R.
Mgr/Food & Vending Serv

Bentley, Quintero, Sarah C.
Instr/Spanish
BA Spanish, Pitzer College, CA
MA Spanish, Portland State University, OR

Berdahl, Angela L.
Instr/Comp & Li
BA English, U Wyoming, WY
MA English, Arizona State Univ, Main, AZ

Bernunzio, Katherine A.
Instr/Dev Ed/Math
BS Mathematics, Portland State University, OR
MED Education, Lewis & Clark College, OR

Bettencourt, Rosa M.
Instr/Poli Sci
BA History, College of Notre Dame, CA
BA Social Service, College of Notre Dame, CA
MA History, U of Southern California, CA
MA Political Science, U of Southern California, CA
PHD Political Science, U of Southern California, CA

Billik, Tamera N.
Mgr/Technology Solutions
BA Elementary Education, Portland State University, OR

Bilyeu, Elizabeth A.
Instr/Vis Arts
BA Art, Wake Forest, NC
MA Womens Studies, University of Leeds, England
MA Archaeology, Washington Univ St Louis, MO
MA Art History, Washington Univ St Louis, MO

Bishop, Camilla L.
Coord/Stud Ldrship
BA Foreign Language, Washington St University, WA
MA Education, Washington St University, WA
PHD Educational Policy & Mgmt, University of Oregon, OR

Blanchette, Linda M.
Staff & Org/1Dev Facilitator
BA French, U New Hampshire, NH
CERT Tesol, Portland State University, OR
MA French, University of Oregon, OR

Blanco Colmenares,Ana C.
Spec/Employment
BBA Business Admin, Simon Rodriguez Ntl Exp U, VNZ

Bledsoe, Lisa S.
Mgr/Employee/Labor Relations
BS Political Science, Portland State University, OR
CERT Human Resource Management, Portland State University, OR

Blumenthal, Pamela S.
Mgr/Stud Reten & Suppt
BA French, University of Oregon, OR
MA Counseling Psychology, Lewis & Clark College, OR

Boehmer, Jennifer
Mgr/Marketing Asst
BA Mass Media Communication, Linfield College, OR

Boehneke, Amy S.
Instr/Dev Ed/ABE
BA Journalism, Drake U, IA
MA English, Drake U, IA
MA Education, Portland State University, OR

Boeschen, Charlotte M.
Instr/World Lang/Spanish
MA Spanish, Portland State University, OR

Bogart, William C.
Instr/Dev Ed
BA English, University of Minnesota, MN
MA English, Portland State University, OR

Bonn, Anne Q.
Spec/Employment
BS Physical Education, University of Oregon, OR

Bonnier, Robert W.
Instr/Diesel Serv Mech
AS Diesel Service Technology, Oregon Inst of Tech, OR

Booker, Tonya S.
Dir/Community Ed
BS Forestry, U of IL Urbana/Champaign, IL
MA Liberal Arts, Stanford University, CA

Bowles, James E.
Dir/Skill Ctr
BS Social Science, Western Oregon University

Boyd, Bunch, Merry L.
Spec/Learning Skills

Boyd, Leslie K.
Instr/Dev Ed
BA English, University of Montana, MT
MA Teaching/English, Portland State University, OR

Boyle, Galezstanz, Traci R.
Coord/Women’s Resource
BS Women’s Studies, Portland State University, OR
MSW Social Work, Portland State University, OR

Bradach, Kathleen M.
Spec/Acad Advising
BS Elementary Education, Oregon State University, OR

Brask, Gerald
Instr/Paralegal
BA Social Science, N Illinois U, IL
JD Law, Univ North Dakota/Main Camp, ND

Brennan, Patsy L.
Accountant II
AS Accounting, Oregon Inst of Technology, OR

Brewer, Daniel
Advisor/Fin Aid
BS History, E Connecticut State Univ, CT
BA Social Science, E Connecticut State Univ, CT
MBA Business Administration, U New Haven, CT

Brewster, Elizabeth
Instr/Landscape
BA Humanities, U of S Florida, New College
BS Horticulture, U Maryland C Park, MD

Briggs, Nancy C.
Instr/Biology
BS Biology, Portland State University, OR
MS Biology, Portland State University, OR

Broich, Regina C.
Coord/Fin Aid
BA English, University of Oregon, OR
Brown, Mary N.  
Instr/CAS  
BA Urban Studies, Eckerd C, FL  
MBA Management, UCLA Los Angeles, CA  

Brown, Sandi K.  
Instr/Nursing  
AS Nursing, Kansas City Cmty JC, KS  
BSN Nursing, Webster College, MO  
MS Education, Pittsburg State University, KS  

Brown, Sheila G.  
Instr/Comp & Lit  
BA English, Florida St U, FL  
MA English, Florida St U, FL  
PHD English, Florida St U, FL  

Brown, Wendy R.  
Spec/Employment  

Browning, Linda M.  
Coord/Bus/Service  
BA Psychology & Sociology, E New Mexico U Main Camp, NM  
MA Personnel Services Psychology, E New Mexico U Main Camp, NM  

Bruno, William G.  
Instr/Bus Admin  
MBA Finance/Marketing, Rutgers St U NJ Newark, NJ  

Brunton, Gwendolyn L.  
Spec/Sr Employment  
BA Fine Arts, Southern Oregon University, OR  
BA Humanities, Southern Oregon University, OR  
MA Counseling, Portland State University, OR  

Bruss, Linda M.  
Instr/Comp App/Office Syst  
BS Business Administration, Portland State University, OR  
MS Business Education, Portland State University, OR  

Bryant, Kristin L.  
Instr/Comp & Lit  
BA English, University of Puget Sound, WA  
MA English, U Colorado Boulder, CO  
DA English, Idaho State University, ID  

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Spec/Employment  
BS Recreation & Park Mgmt, University of Oregon, OR  

Buesseler, John  
Spec/Instructional Comp  
BA Electrical Engineering, California St U, Long Beach  

Burns, Robert J.  
Instr/Dev/Ed/Engl  
BS Liberal Studies, Oregon State University, OR  
MAT Education, University of Portland, OR  

Burwell, Robin A.  
Spec/Student Res  
BS Sociology, Oregon State University, OR  
MS Industrial Relations, University of Oregon, OR  

Buseman, Carlstrom, Tracy L.  
Coord/Vol Lit Tutor Prg  
BS Human Development, Oregon State University, OR  
CERT Teaching English to Others, Portland St Univ, OR  
MED Adult Education, Oregon State University, OR  

Buessiere, Rene M.  
ACERT1, California Culinary Academy, CA  
BA Psychology, U of CA/Santa Cruz, CA  
BA Art History, Mary Washington College, VA  

Buswell, Benjamin J.  
Instr/VisArts  
BFA Visual Arts, Oregon State University, OR  
MA Art, U Wisconsin Madison, WI  
MFA Art, U Wisconsin Madison, WI  

Butler, Michelle L.  
Spec/Learning Skills  
AA General Studies, North Idaho College, ID  
BA Speech Communication, Carroll College, MT  

Bynoe, Gilbert R.  
Instr/Aviation Maint Tech  
AS General Studies, Three Rivers C Tech, CT  
BS Vocational Education, S Illinois U Carbondale, IL  

Cabanban, Judith L.  
Instr/Health Information Mgmt  
AAS Health Information Mgmt, Portland Comm Coll, OR  

Cain, Diedre C.  
Instr/ESOL  
ACERT1 English as a Second Lang, Portland St Univ, OR  
BA International Studies, University of the Pacific, CA  

Cain, Jill E.  
Coord/Resource Ctr  
BA Psychology, Westmont College, CA  
MS Clinical Psychology, California St U, Fullerton, CA  

Campbell, Jean D’arc K.  
Dir/Int’l Ed  
AA Liberal Arts, Broome CC, NY  
BA Political Science, SUNY Binghamton, NY  
BA Sociology, SUNY Binghamton, NY  
MA, SUNY Binghamton, NY  

Caraher, Colleen C.  
Facil/Nurs Skills Lab  
AA Nursing, Portland CC, OR  

Carman, Hal D.  
Instr/Auto Body Rep  
BS Industrial Education, Oregon State University, OR  

Carney, Katherine E.  
Instr/ESOL  
BA English, U of CA/ Santa Barbara, CA  
MAT Tesol, Sch International Training, VT  

Carpenter, Lynn M.  
Spec/Employment  

Carrigan, Kathleen E.  
Instr/Chem  
BS Chemistry, Bridgewater St C, MA  
MS Chemistry, U Colorado Boulder, CO  

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Sup/Mental Health A & D  
BA Social Work, Chapman University, CA  
MSW Social Work, Portland State University, OR  

Caruso, Maria C.  
Instr/Comp & Lit  
BA Humanities, Michigan State University, MI  
MFA English, U of California/Irvine, CA  

Carver, Dorothy  
Instr/Dev Ed/Math  
BA French, U of IL-Urbana, Champaign, IL  
BA Elementary Ed, U of IL-Urbana, Champaign, IL  
MA Mathematics Education, Fresno Pacific College,CA  
MED Reading Specialist, U of IL-Urbana, Champaign, IL  

Casciato, Nancy A.  
Instr/Comp & Lit  
BA English, Portland State University, OR  
MA English, Portland State University, OR  
PHD English, University of Oregon, OR  

Casto, Estella K.  
Instr/Comp & Lit  
AB French, Ohio University, OH  
AB Political Science, Ohio University, OH  
MA English, Ohio University, OH  
PHD English, Ohio University, OH  

Cawley, Kendra C.  
Dir/Dean  
BA Biology, Carleton C, MN  
MS Genetics, U Connecticut, CT  
PHD Biological Sciences, Washington Univ St Louis, MO  

Chadwick, Laurie A.  
Coord/Education  
BS Social Science, Portland State University, OR  
BS Sociology, Portland State University, OR  

Chairsell, Christine  
VP/Academic & Student Affairs  
BA Political Science, University of NV/Las Vegas, NV  
MA Political Science, University of NV/Las Vegas, NV  
EDD Educational Leadership, Univ 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 University, OR  
MA Health Admin & Policy Univ of Phoenix, AZ  

Chapman, Steven C.  
Spec/Employment  
BA French, Beloit College, WI  
BS Spanish, Beloit College, WI  

Chatterton, Cole T.  
Instr/Bus Admin  
BS Information Tech, George Fox University, OR  
BS Business, George Fox University, OR  
MBA Business Administration, George Fox University, OR  

Cheney, Dana M.  
Spec/Employment  

Chester, Catherine C.  
Campus Community Relations Office  
BA Government, U Notre Dame, IN  
BA International Teaching, U Notre Dame, IN  
MA Public Relations, U of Southern California, CA  

Chevalier, Cherie D.  
Associate VP/Finance  
BS Business Administration, California St U Hayward,CA  
MBA Business Administration, City Univ of Seattle, WA  

Christain, Phillip T.  
Spec/Academic Advising  
BS Recreation & Park Mgmt, University of Oregon, OR  
MED Educational Administration, Grand Canyon Univ,AZ  

Christian, Virginia D.  
Asst Coord/Women’s Resource  
BA Communication, Marylhurst University, OR  
MA Counseling Psychology, Pacifica Graduate Inst, CA  

Christiansen, Janet E.  
Mgr/Contract and Grant Acctg  

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<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Program</th>
<th>Education/Training Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher, Connie</td>
<td>Instr/Welding</td>
<td>MA Geography, U S Carolina Columbia, SC</td>
</tr>
<tr>
<td>Christopher, Susanne M.</td>
<td>Instr/Pers Health</td>
<td>BS Health Education, Oregon State University, OR, MED Health Education, Oregon State University, OR, EDD Adult Leadership &amp; Post Sec Ed, Portland St Univ, OR</td>
</tr>
<tr>
<td>Chung, Cau</td>
<td>Mgr/Bond Accounting</td>
<td>BS Business/Accounting, Portland State University, OR, MBA Business Administration, Portland State University, OR</td>
</tr>
<tr>
<td>Chung, Wing, Kit D.</td>
<td>VP/Admin Svcs</td>
<td>BA Business, Southern Oregon University, OR, MBA Business Administration, Oregon State Univ, OR</td>
</tr>
<tr>
<td>Clark, Gayle M.</td>
<td>Spec/Employment/</td>
<td></td>
</tr>
<tr>
<td>Clausen, Larry R.</td>
<td>Spec/Apprenticeship &amp; Training</td>
<td>BA Psychology, Psychology, Oregon State University, OR, MED Admin, Plan &amp; Social Policy, Harvard U, MA, EDD Higher Education, Harvard U, MA, MPH Medical Care Organization, University of Michigan, OD Optometry, Pacific University, OR</td>
</tr>
<tr>
<td>Claussen, Daniel L.</td>
<td>Instr/ESOL</td>
<td>MA Tesol, Portland State University, OR</td>
</tr>
<tr>
<td>Clay, Charles R.</td>
<td>Coord/Employment Spec</td>
<td>BA Social Science, U of East Anglia, Norwich, UK, BA Economics, U of East Anglia, Norwich, UK</td>
</tr>
<tr>
<td>Cloud, Katrina M.</td>
<td>Spec/Apprenticeship &amp; Training</td>
<td>BBA Business Admin, American Intercontinental U, GA, MED Instructional Tech, American Intercontinental U, GA</td>
</tr>
<tr>
<td>Coates, Sharon A.</td>
<td>Instr/Math</td>
<td>BS Elementary Education, Portland St Univ, OR, MS Elementary Education, Portland State University, OR</td>
</tr>
<tr>
<td>Cochrane, Deborah J.</td>
<td>Coord/Port Teacher Prog</td>
<td>BA English, University of Oregon, OR</td>
</tr>
<tr>
<td>Cohen, Andrew D.</td>
<td>Instr/CreativeWr/Comp&amp;Lit</td>
<td>BA English, Tufts U, MA, MFA Creative Writing, University of Michigan, MI</td>
</tr>
<tr>
<td>Cole, Donna N.</td>
<td>Instr/Vis Arts</td>
<td>MFA Fine Arts, Kansas State University, KS</td>
</tr>
<tr>
<td>Cole, Heather</td>
<td>Instr/Dev/Eng/</td>
<td>AA Liberal Arts, Ohlone College, CA, BA English Literature, U of California/Berkeley, CA, MA English Literature, San Francisco State U, CA</td>
</tr>
<tr>
<td>Coleman, Gerald W.</td>
<td>Spec/Coop Ed/Stdtmt Employment</td>
<td>BA Social Work, California St U, Sacramento, CA</td>
</tr>
<tr>
<td>Conover, Lori J.</td>
<td>Coord/Employment Spec</td>
<td></td>
</tr>
<tr>
<td>Constantino, Matthew W.</td>
<td>Instr/Geog</td>
<td>BS Geography, U Oklahoma Norman Camp, OK, MA Geography, U S Carolina Columbia, SC</td>
</tr>
<tr>
<td>Cooney, Kathryn G.</td>
<td>Dir/ForceDevProg</td>
<td>BA Linguistics, University of Oregon, OR, MA Speech Pathology, University of Oregon, OR, Cordle, Alan D. Ref Librarian BA English, Virginia Poly Inst &amp; St U, V MLS Library &amp; Information Science, N C Cntrl, NC</td>
</tr>
<tr>
<td>Correia, Hasegan, Dorina M.</td>
<td>Instr/Microelectronics</td>
<td>MS Industrial Technology, Purdue University, IN, Corrill, Patricia S. Coord/Acad Advising BA Psychology, U Arkansas Main Camp, AR</td>
</tr>
<tr>
<td>Countryman, Jones, L.</td>
<td>Instr/Led Lab Tech</td>
<td>BS Microbiology, CA Polytechnic State U, CA, Countryman, Jones, L. Instr/Led Lab Tech BS Microbiology, CA Polytechnic State U, CA</td>
</tr>
<tr>
<td>Courts, Mary M.</td>
<td>Instr/Anthropology</td>
<td>BA Psychology, Rocky Mountain College, MT, MA Anthropology, University of Montana, MT, PhD Anthropology, University of Oregon, OR</td>
</tr>
<tr>
<td>Cowburn, Stuart</td>
<td>Grants Officer</td>
<td>BA Philosophy, University of Liverpool, UK, BS Geology, Portland State University, OR, MS Geology, Portland State University, OR</td>
</tr>
<tr>
<td>Craig, John, S.</td>
<td>Superviso/TSS</td>
<td></td>
</tr>
<tr>
<td>Crofts, James H.</td>
<td>Spec/Employment</td>
<td>BS Accounting, Utah State University, UT</td>
</tr>
<tr>
<td>Cruse, Michael D.</td>
<td>Spec/Employment</td>
<td>BS Liberal Arts, Portland State University, OR, Cruse, Michael D. Spec/Employment BS Liberal Arts, Portland State University, OR</td>
</tr>
<tr>
<td>Cruse, Michele M.</td>
<td>BA Public Admin, Univ of Pittsburgh, PA, MA, Public Admin Portland State University, OR, Curren, Sandra R. Instr/Dental Hyg AAS Dental Hygiene, Portland CC, OR, BS Dental Hygiene, Oregon Inst of Technology, OR, MSE Post Secondary and Adult Ed, Capella University, MN</td>
<td></td>
</tr>
<tr>
<td>Curren, Louissa M.</td>
<td>Mgr/Campus Tech Serv</td>
<td>AAS Computer Programming, Portland CC, OR</td>
</tr>
<tr>
<td>Cutsforth, Cecelia M.</td>
<td>Instr/Graphic Design</td>
<td>BFA Visual Arts, Oregon State University, OR, Cutsforth, Cecelia M. Instr/Graphic Design BFA Visual Arts, Oregon State University, OR</td>
</tr>
<tr>
<td>Cypher, Jackilyn E.</td>
<td>Instr/EMT</td>
<td>AS Nursing, RN, Imperial Valley College, CA, BS Nursing, National University, CA, MN Nursing, University of Phoenix, AZ</td>
</tr>
<tr>
<td>Daily, Joan A.</td>
<td>Instr/Radiol Tech</td>
<td>BS Allied Health Ed, U Texas Hlth Sci Dallas, TX, MBA Health Care Administration, City Univ of Seattle, WA Daugherty, Jana L. Spec/Comm Resource BA Literature, New College of Florida, FL</td>
</tr>
<tr>
<td>Davis, Angelina M.</td>
<td>Counselor/Rehab Guid</td>
<td>BS Psychology, Portland State University, OR, MS Education Counseling, Portland State University, OR</td>
</tr>
<tr>
<td>Davis, Cainon, Regina G.</td>
<td>Spec/Student Res</td>
<td>BS Social Science, Portland State University, OR, BS Speech Communication, Portland State University, OR, Davis, Dawn H. Coord/Comm Ed Program BS Zoology, Ohio St U Main Cam, OH, MSE Ed Policy, Foundation &amp; Admin, Portland State University, OR, Davis, Kimberley C. Coord/Employment Spec BS Psychology, Oregon State University, OR</td>
</tr>
<tr>
<td>Davis, Mary T.</td>
<td>Coord/Bus Ting &amp; Ed Dev</td>
<td>BS Curriculum &amp; Instruction, University of Oregon, OR, Dawson, James Spec/Trainer Education BS Mathematics, Alabama St U, AL, Dawson, James Spec/Trainer Education MED Adult Education, Oregon State University, OR, Day, Christina L. Mgr/Budget AA Business Technology, Central Oregon CC, OR, DeBlois, Anna K. Spec/Employment BBA Business Administration, Boise State University, ID</td>
</tr>
<tr>
<td>Degman, Linda M.</td>
<td>Assoc Dir/Project</td>
<td>BS Social Science, Portland State University, OR, MPA Public Admin, Portland State University, OR</td>
</tr>
<tr>
<td>DeGraw, Edward A.</td>
<td>Instr/Biology</td>
<td>BS Biology, Portland State University, OR, PHD Biology, Portland State University, OR, PHD Environ Sciences &amp; Resources, Portland St Univ, OR</td>
</tr>
</tbody>
</table>
Dimant, Tzipora F.
Coord/Comm Ed Program
BA Organizational Communication, Marylhurst University, OR
CERT Human Resource Management, Portland State University, OR

Diniz, Luciana S.
Instro/ESOL
BA Portuguese, Sao Paulo State Univ, Brazil
BA English, Catholic Univ/Santos, Brazil
MA Applied Linguistics, Georgia State U, GA
PHD Applied Linguistics, Georgia State U, GA

Dins, Kathryn M.
Div Dean
BS Sociology, U Wisconsin Stevens Pt, WI
BS Psychology, U Wisconsin Stevens Pt, WI
MS Ed Policy, Foundation & Admin, Portland State University, OR
PHD Education, Oregon State University, OR

Dionne, Scott S.
Instro/Comp & Lit
BA Political Science, Gonzaga University, WA
MA Rhetoric and Composition, Eastern Washington U, WA
MA English, Eastern Washington U, WA

Dittrich, William A.
Instro/Physics
BS Physics, Western Washington University, WA
MS Physics, U Colorado Boulder, CO
MA Aeronautical Engineering, University of Washington, WA

Dodean, Rozalia A.
Instro/Chem
BS Chemistry, Portland State University, OR
MS Chemistry, Portland State University, OR

Dodge, Kenneth E.
Mgr/Workforce Dev
BA Political Science, University of Oregon, OR
BS Ed Policy, Foundation & Admin, Portland State University, OR

Donahue, Timothy J.
Dir/Physical Plant
BS Business Administration, University of Montana, MT
MT Finance, Washinton St University, WA

Donnelly, Gerald T.
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BS Political Science, Oregon State University, OR
BS American Studies, Oregon State University, OR
MS Industrial Relations, University of Oregon, OR

Donohue, May L.
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AA Liberal Arts, U Hawaii Kapiolani CC, HI
BA Communication Studies, Portland State University, OR

Dougherty, Daniel J.
Instro/Comp Info Sys
BS Mathematics, SUNY Stony Brook, NY
MS Operations Research U of California/Berkeley, CA

Dow, Jo Lynn
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BA Humanities, Marylhurst University, OR
MS Ed Policy, Foundation & Admin, Portland State University, OR

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BA Communicative Disorders, San Diego State University, CA
MS Rehabilitation Counseling, San Diego State University, CA

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Grants Officer
BA Political Science, Montana State U/Bozeman, MT
MA Political Science, Portland State University, OR

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Instro/Nursing
BS Nursing, University of Portland, OR
MS Nursing, University of Portland, OR

Dumas, Leah M.
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MPA Public Admin, Portland State University, OR

Duncan, Colleen M.
Instro/Nursing
BS Nursing, Oregon Health Science U, OR
MS Nursing, Oregon Health Science U, OR

Dundorf, Christyn
Instro/Child Dev/EEFS
BA Psychology, Carleton C, MN
MS Human Development, University of Rochester
PHD Human Development, University of Rochester

Dunnington, Russell J.
Instro/Diesel Serv Mech
AS Diesel Power Technology, Lower Columbia C, WA
BS Diesel Power Technology, Oregon Inst of Tech, WA

Dwyer, DaNene K.
Mgr/Workforce Dev

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Coord/Curriculum
BA Organization and Management, George Fox University, OR
MED Educational Leadership, Lewis & Clark College, OR

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Mgr/Campus Tech Serv
AS Computer Field Servicing, Portland CC, OR
BS Business Administration, Oregon State University, OR

Eby, Linda L.
Instro/Nursing
BS Nursing, Oregon Health Science U, OR
MN Nursing, Oregon Health Science U, OR

Eden, James W.
Instro/Econ
BS Economics, University of Hull England
MS Economics, Portland State University, OR

Eden, Linda J.
Dir/Aux Services
BS Institutional Mgmt & Dietetics, Oregon State University

Edwards, Brandon G.
Instro/Math
BA Physics, Portland State University, OR
BA Mathematics, Portland State University, OR
MS Mathematics, U British Columbia, CA

Edwards, Christopher N.
Instro/Speech
BA Psychology, Washington St University, WA
BA Speech Communication, Washington St University
MS Communication, Purdue University, IN

Edwards, Heidi D.
Coord/Retention Title II
BA Anthropology, Purdue University, IN
MS Speech Communication, Portland State University, OR

Edwards, Jeff A.
Instro/Bus Admin
BS Business, University of Oregon, OR
BS Finance, University of Oregon, OR
MBA Business Administration, Portland State University, OR

Elhissi, Jacqueline M.
Instro/Art
AA Undeclared, Portland Community College, OR
BA Fine & Applied Arts, University of Oregon, OR
BFA Painting, Pacific NW College of Art, OR
MFA Art, University of N/VLas Vegas, NV

Ehrenhaus, Charmagne D.
Div Dean
BA Speech University of Minnesota, MN
MA Speech Communication, University of Minnesota, MN

Ellerton, Amanda T.
Coord/Study Labshp
BA Communication Arts, Pacific Lutheran U, WA
MA History, Portland State University, OR

Elliott, Jacqueline M.
Counselor
BS Secondary Education, U Wisconsin Milwaukee, WI
MS Counseling, Portland State University, OR

Ellis, Diana L.
Instro/Business Administration
BS Education, Henderson St U, AR
MS Education, Henderson St U, AR

Elsasser, Sarah K.
Spec/Student Res
BS Psychology, Portland State University, OR
MS Counseling Psychology, Lewis & Clark, OR

England, Eileen L.
Accountant II

Erickson, Sammuel D.
Instro/Comp & Lit
BA English Literature, Kansas State University, KS
MA English, Kansas State University, KS

Esary, Kendi R.
Coord/Study Labshp
AA General Studies, Columbia Basin College, WA
BA Recreation, Eastern Washington U, WA
MED Student Personnel Admin, Western Washington Univ, WA

Eshleman, Lucinda L.
Coord/Acad Advising
BS Sociology, Portland State University, OR
MEd Education, Portland State University, OR
MLS Library Science, Emporia State University, KS

Espinosa, Jorge E.
Instro/Speech
BS Music, Lewis & Clark College, OR
MA Speech Communication, Oregon State U, OR

Evans, Katharine S.
Instro/Comp & Lit
BA Anthropology, University of Washington, WA
DA English, University of Oregon, OR
MA English, University of Oregon, OR

Evind, Deborah
Coord/Women’s Resource
AA Psychology, Santa Rosa Junior College, CA
BA Psychology, Sonoma State University, CA

Fan, Lee S.
Coord/Train/Pr for Stud w/Dis
BS Management, U Wisconsin Superior, WI
BS Marketing, U Wisconsin Superior, WI
MS Education, Portland State University, OR
CERT Urban Special Education, Harvard U, MA

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<tr>
<th>Name</th>
<th>Degree(s)</th>
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<td>Flynn, Robert J.</td>
<td>Instr/Hist</td>
<td>BA Economics, U Massachusetts Amherst, MA</td>
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<td>MA History, U Kentucky Main Camp, KY</td>
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<td>PhD Philosophy, U Kentucky Main Camp, KY</td>
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<td>Folberg, Lisa M.</td>
<td>Instr/Math</td>
<td>BS Accounting, Utah State University, UT</td>
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<td>Fong, April A.</td>
<td>Instr/Biology</td>
<td>BA Biology, U of California/Berkeley, CA</td>
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<td>MS Entomology, U of California/Davis, CA</td>
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<td>Forshee, Andrew S.</td>
<td>Instr/Early Educ. &amp; Fam Studies</td>
<td>BA Philosophy, The Evergreen State College, WA</td>
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<td>MA Human Development, Pacific Oaks College, CA</td>
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<td>PhD Human Services, Walden University, MN</td>
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<td>Foyt, Terrell V.</td>
<td>Instr/Comp Info Sys</td>
<td>BS Medical Laboratory Tech, U Illinois Med Ctr Chicago, IL</td>
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<td>MS Computer Science, N Illinois U, IL</td>
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<td>Foxworth, Derrick</td>
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<td>Public Safety Lieutenant</td>
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<td>BS University of Portland, OR</td>
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<td>Frank, Roger A.</td>
<td>Counselor</td>
<td>BS Psychology, Portland State University, OR</td>
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<td>MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
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<td>Frank, Simone J.</td>
<td>Counselor</td>
<td>BA Psychology, University of New Mexico, NM</td>
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<td>MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
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<td>Instr/Math</td>
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<td>Fresh, Wendy J.</td>
<td>Instr/Math</td>
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<td>MST Mathematics, Portland State University, OR</td>
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<td>Friedman, Miriam L.</td>
<td>Dir/Grant Development</td>
<td>BA Psychology, U Massachusetts Amherst, MA</td>
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<td>MS Ed Policy, Foundation &amp; Admin, Portland St Univ, OR</td>
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<td>Friedrich, Kenneth L.</td>
<td>Instr/Chemistry</td>
<td>BS Biochemistry, Seattle Pacific University, WA</td>
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<td>PhD Biochemistry, University of Arizona, AZ</td>
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<td>Fu, Shelton</td>
<td>Instr/Microelectronics</td>
<td>BS Mathematics, Hamilton C, NY</td>
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<td>PhD Materials Science and Engr, U Pennsylvania, PA</td>
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<td>Fukuyama, Kathy H.</td>
<td>Mgr/Facilities Project &amp; Arch</td>
<td>AB Architecture, Washington Univ St Louis, MO</td>
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<td>MA Architecture, Washington Univ St Louis, MO</td>
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<td>Funk, Matthew W.</td>
<td>Instr/Math</td>
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<td>Fyfield, Margaret S.</td>
<td>Div Dean</td>
<td>BA Physics, Portland State University, OR</td>
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<td>PhD Physics, Portland State University, OR</td>
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<td>Galba-Machuca, Debra M.</td>
<td>Instr/Biology</td>
<td>BS Biology, SUNY Excelsior College, NY</td>
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<td>ZDOH Chiropractic Medicine, Palmer College of Chiropractic/West, CA</td>
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<td>Garber, Susan M.</td>
<td>Instr/Alcohol &amp; Drug Counsel</td>
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<td>Garcia, Michelle A.</td>
<td>Vocational Trainer</td>
<td>AA Business Administration, Taylor Business Inst, NY</td>
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<td>Garcia, Veronica R.</td>
<td>Dean/Enroll Svcs</td>
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<td>MED Educational Leadership, Northern Arizona University, AZ</td>
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<td>BA Communication, University of Michigan, MI</td>
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<td>International Stdnt Advisor</td>
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<td>Garner, John W.</td>
<td>Mgr/Pkg/Trans Svcs</td>
<td>BA English, Iowa State University, IA</td>
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<td>Garwood, Algie C.</td>
<td>Campus President/Cascade</td>
<td>BA Social Science, Livingstone C, NC</td>
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<td>EDD Adult &amp; Com Coll Educ, N Carolina St U Raleigh, NC</td>
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<td>George, Anthony L.</td>
<td>Mgr/Print Center</td>
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<td>Geiger, Charles W.</td>
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<td>Campus Prov/Sylvania</td>
<td>BA English, Portland State University, OR</td>
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<td>Gerstner, Gregory</td>
<td>Instr/Mech Eng</td>
<td>BS Mechanical Engineering, University of Michigan</td>
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<td>Gettmann, Linda M.</td>
<td>Assoc Dean/Student Develop</td>
<td>AAS Medical Record Technology, Portland CC, OR</td>
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<td>Gieber, Jon S.</td>
<td>Instr/Alcohol &amp; Drug Counsel</td>
<td>BS Psychology, University of Oregon, OR</td>
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<td>Gillette, Susan D.</td>
<td>System Analyst</td>
<td>AAS Applications Computer Program, Portland CC, OR</td>
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<td>Gilman, Katie J.</td>
<td>Spec/Employment</td>
<td>BA Political Science, Oregon State University, OR</td>
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<td>Gilmore, Barbara</td>
<td>Instr/Phys Ed</td>
<td>BS Microbiology, Oregon State University, OR</td>
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<td>Giustini, Irene</td>
<td>Dir/Inst Health Care</td>
<td>BS Microbiology &amp; Immunology, McGill University, CN</td>
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<td>Goble, Colin E.</td>
<td>Instr/Comp Sci</td>
<td>MA Computer Science, U of California/Berkeley, CA</td>
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<td>Gohde, Maureen S.</td>
<td>Instr/Nursing</td>
<td>BSN Nursing, Michigan State University, MI</td>
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<td>Goldenberg, Haydee H.</td>
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<td>BA Psychology, California St U-Fullerton, CA</td>
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<td>Goldy, Loretta A.</td>
<td>Instr/Hist</td>
<td>AA Secretarial Science, Fullerton College, CA</td>
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<td>Golledge, Cynthia P.</td>
<td>Instr/Psych</td>
<td>BS Psychology, Missouri S St C, MO</td>
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<td>Gondara, Brookney C.</td>
<td>Div Dean</td>
<td>BA Sociology/Native Amer Studies, Montana State U</td>
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<td>Goodwin, Kenneth D.</td>
<td>Dir/Public Safety</td>
<td>BA Criminal Justice, California St U, Sacramento, CA</td>
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<td>Googins, John L.</td>
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<td>BA Anthropology, University of Montana, MT</td>
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<td>Gottfried, Corbett S.</td>
<td>Dir/Financial Aid</td>
<td>BA History, Southern Oregon University, OR</td>
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<td>Goulard, Frank</td>
<td>Instr/Math</td>
<td>BA Physical Education, Purdue University, IN</td>
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<td>Gray, Sylvia H.</td>
<td>Instr/Hist</td>
<td>AS Business Administration, Portland CC, OR</td>
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<td>Gregory, Keith A.</td>
<td>Interim Dir/Physical Plant</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 Univ, WA</td>
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<td>Greiner, Anthony E.</td>
<td>Rel Librarian</td>
<td>BA Music Education, James Madison U, VA</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>Guevara, Heather L.</td>
<td>Instr/Social</td>
<td>BA Psychology, Yakima Valley CC, WA</td>
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<td>Greene, Cecelia E.</td>
<td>Instr/Dev Ed/Eng</td>
<td>BA Linguistics, U of California/Berkeley, CA</td>
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<td>Coor/MWESB Procurement</td>
<td>BA Spanish, University of Oregon, OR</td>
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<td>Guthrie, Michael E.</td>
<td>Instr/Phys Ed</td>
<td>BA Business Administration, U Hawaii Manoa, HI</td>
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<td>Instr/Ind Draft/Illus</td>
<td>AAS Engineering Technology, Clark College, WA</td>
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<td>Spec/ST Comr Resource</td>
<td>AB Sociology, Regis University, CO</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>Instr/Comp Info Sys</td>
<td>AAS Data Processing, Portland CC, OR</td>
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<td>Instr/Optical Med Tech</td>
<td>BS Health Care Administration, Concordia University, OR</td>
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<td>Instr/Hist</td>
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<td>Coor/Bus Trng &amp; Ed Dev</td>
<td>BS General Science, University of Portland, OR</td>
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<td>BS Business Management, City Univ of Seattle, WA</td>
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<td>Public Affairs Manager</td>
<td>BA Political Science, Lewis &amp; Clark College, OR</td>
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<td>Hennessy, Sharon G.</td>
<td>Instr/ABE/ESL</td>
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Hernandez, Vanessa M.
Spec/Employment
BBA Business Administration, University del Valle, Columbia

Hess, Philip W.
Coord/Fin Aid
BA Counseling Education, Columbia Christian C, OR
MS School Psychology, Lewis & Clark College, OR

Heuer, Michael J.
Mgr/TSS Customer Supp
BA Information Systems, DePaul U, IL

Heumann, Judy R.
Instr/ABE/GED
BA Education, San Diego State University, CA
MS Education, Portland State University, OR

Hickok, Damon A.
Spec/Student Res
BS Social Science, Portland State University, OR
MED Counseling & Guidance, City Univ of Seattle, WA

Hicks, James H.
Instr/Art Hist
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MA Art History, University of Oregon, OR

Hill, James G.
Spec/Pub Affairs Communication

Hill, Roxanne W.
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BA Linguistics, University of Minnesota, MN
MA Teaching ESL, University of Minnesota, MN

Hill, Sucharittha M.
International Student Advisor
BS Psychology, Southern Oregon University, OR
MA Mental Health Counseling, Southern Or Univ, OR

Hinkle, Spencer M.
Instr/Bldg Trades
ACER1 Building Construction Techno, Portland CC, OR
BA Geography, U S Florida, FL

Ho, Katy W.
Associate Dean/Student Develop
BS Public Relations, University of Oregon, OR
MED College Student Services Admin, Oregon State University, OR

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Advisor/Fin Aid

Hollamon, Pattie J.
Human Resource Rep
BA Organizational Communication, Maryhurst University, OR
MA Organization and Management, City Univ of Seattle, WA

Holloway, Kathleen L.
Coord/Sr Vol Lit Tutor Prg
BA Psychology, Pacific Lutheran, WA
BA Religion, Pacific Lutheran, WA
MAT Teaching ESL, Sch International Training, VT

Holman, Jane E.
Instr/Comp & Lit
BS Sociology, University of Oregon, OR
MA English, Portland State University, OR

Holmberg, Lawrence A.
Mgr/Information Tech
BA Philosophy, Haverford C, PA

Holt, Michael E.
Advisor/Fin Aid
BS Business Administration, Oregon State University, OR

Hooke, Wayne D.
Instr/Psych
AB Philosophy, U Georgia, GA
MA Education, U Georgia, GA

Hopf, Samantha N.
Mgr/Fin Systems Dev
AA Hotel/Restaurant Mgmt, Diablo Valley College, CA
BA Business Management, Whittier College, WA
MBA Business Administration, Eastern Washington U, WA

Hopf, Steven J.
Dir Mgr/Finance
BA Interdisciplinary Studies, Eastern Washington U, WA
MA Public Admin, Portland State University, OR

Horani, Laura A.
Instr/ESOL
BA Speech Communication, Portland State University, OR
CERT Tesol, Portland State University, OR
MA Tesol, Portland State University, OR

Horner, Shane M.
Instr/Comp
BS Mathematics, Western Oregon University, OR
MS Mathematics, University of Washington, WA

Hornshu, Mark W.
Spec/EMS Prog
BS Business Administration, Portland State University, OR

Howard, Genevieve
Program Manager I
AAS Communication, CC Air Force, AL
BA Anthropology, California St U, Bakersfield, CA
MA Anthropology, California St U, Bakersfield, CA

Huddele, Linda J.
Dir/Alt Programs
BA Foreign Language, University of Oregon, OR
MA Industrial/Labor Relations, University of Oregon, OR

Huddleston, Joseph C.
Instr/Mig Tech
AA Machine Manufacturing Technology, Portland CC, OR
BS Manufacturing Engineer Technology, Oregon Inst of Technology, OR
MS Manufacturing Engineer Technology, Oregon Inst of Technology, OR

Huff, E Scott
Dean/Instruction
BS Civil Engineering, U Maine, ME
MS Civil Engineering, Oregon State University, OR

Hughes, Christopher M.
Instr/Math
MS Mathematics, University of Reading, U K
PHD Mathematics, University of Reading, U K

Hull, Bryan G.
Instr/Comp & Lit
BA English, Boston U, MA
MA English, U or California/Irvine, CA

Hull, Janeen R.
Instr/Phys Ed
BED Sport Fitness, U Alabama, AL
MSK Applied Sport Science, Indiana U Cntl Off, IN

Huminski, Thomas M.
Instr/Comp & Lit
BA Communication, U Michigan Ann Arbor, MI
MA English, Portland State University, OR

Hunt, Teri L.
Mgr/Payroll

Hunter-Bernstein, Gabriel J.
Mgr/REAP Program
BS Elementary Education, Boston U, MA
MA Education, California St U, Dmgz Hills, CA

Hunter-Bernstein, Michael C.
Vocational Trainer
BED Communication Arts, Pacific Lutheran Univ, WA
MA Education/Math, Western Governors Univ, UT

Huston, Melinda L.
Instr/Geology
BS Geophysics, University of Minnesota, MN
MS Earth Science, SUNY Stony Brook, NY
PHD Planetary Science, University of Arizona, AZ

Hutt, Nancy L.
Instr/Nursing
BS Nursing, U Wyoming, WY
MS Nursing, U Colorado Health Sci Ctr, CO
Spec/Employment/Bilingual

Ingelviciute, Ernesta
BA Psychology, Vilnius University, Lithuania
MA Psychology, Vilnius University, Lithuania

Ivan, Ligia
Accountant I

Iversen, Susan M.
Instr/Dev Ed Read &Writ
BA Spanish, Oregon State University, OR
BA Home Economics, Oregon State University, OR
MA Curriculum & Instruction, Portland State University, OR

Iyer, Gayathridevi S.
Instr/Comp Sci
BS Electrical and Electronics Eng, Annamalai Univ, India
MS Electrical Engineering, Kansas State University, KS

Jacobson, David W.
Instr/Dev Ed/Engli
BA General Literature, University of Oregon, OR
MA English, University of Oregon, OR

Jaekle, Jeff A.
Instr/Comp & Lit
BA English, U of Texas-San Antonio, TX
MA English, U of Texas-San Antonio, TX
PHD English, University of Texas-Austin, TX

Jannsen, Marcia A.
Spec/Employment
BA Interdisciplinary Studies, Maryhurst University, OR
MED Instructional Technology, American Intertional U, GA

Jantze, Diane M.
Spec/Employment
BA General Literature, University of Oregon, OR

Jarcho, Debra L.
Mgr/Bond Technology Project
AA Electronic Technology, Chabot College, CA
BA Education, Kirkland College, NY

Jeffery, James D.
Instr/Auto Body Rep
AAS Auto Collision Repair, Portland CC, OR

Jensen, Deborah M.
Coord/Education
BS Rehabilitation Education, Pennsylvania State Univ, PA

Jensen, John C.
Instr/Comp & Lit
BS English, U of California/Davis, CA
MA Public Affairs, American University
MA Journalism, American University
MDIV Theology, Princeton Theol Sem, NJ
Jernigan, Eric
Mgr/Information Security
BA Information Systems, Weber State University, UT

Johnson, Julianne R.
Instr/Music

Johnson, Maniza A.
Spec/Student Res
MA English, University of Dhaka
MED Education, Northern Col St Univ Proj
PHD Business Education, Univ North Dakota/Main Camp, ND

Johnson, Mona L.
Instr/Psych
BA Psychology, U of CA, San Diego (UCSD), CA
MS Counseling, San Diego State University, CA

Jones, Allan R.
Instr/Prof Music
AAS Vocational Music, Portland CC, OR
BA Human Resource Management, George Fox University, OR

Jones, Clifford
Instr/Comp Sci
BA Mathematics, Reed College, OR
CERT Computer Model & Sim Cert, Portland St Univ, OR
MBA General Business, University of Oregon, OR

Jones, Cynthia D.
Spec/Club and Programs
BS Psychology, Portland State University, OR

Jones, Dianne L.
Spec/Employment
BA Elementary Education, Western Oregon University
CERT Lifetime Teaching Credential, San Fran State U, CA
CERT Head Start, W Michigan U, MI

Jones, Karen J.
Coord/Tech Prep
BS Housing Design, Oregon State University, OR
MED Adult Education (ABE or GED), Oregon State University, OR

Jones, Linda
Instr/Early Educ & Fam Studies
BA History, Loyola Marymount University, CA
MS Curriculum & Instruction, Portland State University, OR

Jones, Russell S.
Instr/Auto Serv Tech
DIP Automotive Technology, Arizona Automotive Inst, AZ

Jordan, Micah F.
Instr/Biology
BS Biology, University of Oregon, OR
MS Biology, University of Oregon, OR

Jorgensen, Virginia A.
Instr/Dental Asst
AAS Prof/Tech Teacher Train, Portland CC, OR

Josilek, Jeffrey S.
Instr/Med Lab Tech
AAS Medical Lab Technology, Portland CC, OR
AS Biology, Umpqua CC, OR
BS Science, Portland State University, OR

Joy, Juanita M.
Instr/Nursing
BS Nursing, California St U,Fresno, CA
MS Nursing, U of CA/San Francisco, CA

Judge-Morris, Maureen A.
Mgr/Employment Svcs
AB Sociology, Univ of Illinois,Chicago, IL

Judy, Robert S.
Instr/Welding
AAS Welding Technology, Portland CC, OR
AAS Auto Collision Repair Technology, Portland CC, OR
CERT Auto Body Painting, Portland CC, OR

Kaady, Paul G.
Vocational Trainer
BS Geograpgy, Portland State University, OR
MS Ed Policy, Foundation & Admin, Portland State University, OR

Kadoun, Linda L.
Spec/Employment
CERT Human Services, Marylhurst University, OR

Kamali, Diane B.
Instr/ESOL/Comp & Lit
AB English, San Diego State University, CA
ACERT1 English as a Second Language, Portland State University, OR
MA Education, San Diego State University, CA

Kaminski, Gregory W.
Instr/Comp Facilitator
BA Biology, Central Washington U, WA
MAT English, University of Washington, WA

Kao, Young, Cara L.
Instr/Dental Hyg
AAS Dental Hygiene, Portland CC, OR
BS Dental Hygiene, Eastern Washington U, WA

Katz, Jessica G.
Spec/Sr Comm Resource
BA Semiotics, Clark U, MA
MS Social Work, Columbia Univ, City of N Y, NY

Kaufman, Barbara A.
Instr/Comp Appl/Office Syst
BS Education, Southern Oregon University, OR
MST Business Education, Portland State University, OR

Kelley, Mary S.
Spec/Student Res
AA Social Services, Lansing CC, MI
BA Law, Michigan State University, MI
BA Social Science, Michigan State University, MI

Kelsay, Lynda D.
Instr/ETM
AS Pre, RN, S Plains C, TX

Kennedy, Tammy L.
Occup Cluster Trainer
LIO Cosmetology, Academy of Hair Design, OR

Kercher, David C.
Instr/Airline Maint Tech
AGEN Aviation Maintenance Technology, Portland CC, OR

Kerr, Gregory
Instr/Comp Appl/Office Syst
BS History, Northern Arizona University, AZ
MS Writing, Portland State University, OR

Kessinger, Pamela C.
Ref Librarian
AA General Studies, Highline CC, WA
BA English, University of Washington, WA
MLS Library Science, University of Washington, WA

Khodaparast, Youssef
Instr/Econ
BS Business, Rasht Business College Iran
MA Economics, New Sch Soc Research, NY
PHD Urban Studies, Portland State University, OR

Kiaunis, Katherine M.
Mgr/Assoc Bond Finance
BA Economics, Hope College, MI
MA Economics, University of Michigan, MI

Kidney, Daniel J.
Instr/Auto Serv Tech
BA History, Portland State University, OR

Kidoguchi, Ivan T.
Instr/Comp & Lit
BA English, University of Washington, WA
MA English, University of Washington, WA

Kidoguchi, Kenneth Y.
Instr/Math
BS Physics, U Hawaii Manoa, HI
MS Physics, University of Washington, WA

Kies, Michael
Instr/Civil Eng
BS Civil Engineer, Oregon State University, OR

Killingworth, Cynthia
Instr/Bus Admin
BA Accounting, University of Puget Sound, WA
MS Accounting, The University Of Maryland Sys, MA

Kim, Jin W.
Instr/Medical Assisting

Kimball, Cynthia A.
Instr/Comp & Lit
BA English, University of Puget Sound, WA
MA English, SUNY Buffalo, NY
PHD English, SUNY Buffalo NY

Kimberly, Elizabeth S.
Counselor
BA Psychology, U Nebraska Lincoln, NE
MA Clinical Psychology, Minnesota St U, Mankato, MN

Kinder Doyle, Sarah
Mgr/Workforce Dev

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

Kingstad, Ronda J.
Instr/Math
BS Mathematics, Montana State U/Bozeman, MT
MS Mathematics, Montana State U/Bozeman, MT

Kinney, Julie B.
Mgr/HR Systems Dev
BS Management/Communication, Concordia University, OR
CERT Human Resource Management, Portland St Univ, OR

Kirchner, Eric J.
Instr/Microelectronics
BS Physics, Rensselaer Poly Inst, NY
MS Material Science Engineer, Rensselaer Poly Inst, NY
PHD Material Science Engineer, Rensselaer Poly Inst, NY

Kissick, Jerry R.
Instr/Math
BS Mathematics, UCLA Los Angeles, CA
MS Mathematics, U Wisconsin Madison, WI
Kuing, Kimberly L.
Instr/Auto Serv Tech
AAS Automotive Service Technology, Portland CC, OR

Kling, Kandace A.
Instr/Math
BS Mathematics, Portland State University, OR
MS Mathematics, Portland State University, OR

Knight, Elizabeth L.
Instr/Comp & Lit
BA English, U New Hampshire, NH
MAFA English, U Massachusetts Amherst, MA

Knox, George D.
Coor/Coop Ed/Plocmt
BA Psychology, Oregon State University, OR
MA English, Oregon State University, OR
MA English, Portland State University, OR

Kolins, Craig
Dean/Instruction/Student Dev
BA Journalism, N Illinois U, IL
MSE Counseling, N Illinois U, IL
PHD Higher Education, U Toledo, OH

Kono, Kim M.
Major Gifts Officer
BA Political Science, U of California/Davis, CA
MPA Public Administration, Lewis & Clark College, OR

Kopet, Julie G.
Div Dean
BA Social Work, Eastern Washington U, WA
MS Adult Education, Portland State University, OR

Koshevoy, Irena N.
Spec/Student Res
BS Data Processing, Moscow St.Instr.Communication

Kouzes, Ross T.
Instr/Math
BA Mathematics, U of CA/Santa Cruz, CA
MS Mathematics, Portland State University, OR

Kraft, Patrick J.
Instr/Mfg Tech
AAS Machine Manufacturing Technology, Portland CC, OR
BS Manufacturing Engineer Tech, Oregon Inst of Tech, OR
CERT Machine Technology, Perry Technical Institute, WA

Krauter, Erin D.
Instr/Med Lab Tech
BS Medical Technology, Oregon Health Science U, OR

Krohn, Brad E.
Instr/Vet Tech
BS Biology, U of IL, Urbana, Champaign, IL
DVM Veterinary Medicine, Mississippi St U, MS

Krug, Kathy A.
Spec/Employment
AA Business, Southwestern Illinois Coll, IL
BS Psychology, Portland State University, OR

Krusse, Dean H.
Instr/Biology
BS Foreign Language, Iowa State University, IA
MS Biology, San Diego State University, CA
PHD Environmental Science Research, Portland State University, OR

Kuba, Kathleen S.
Spec/Coop Ed/St dent Employ
BA Communications, Lewis & Clark College, OR
CERT Tced, Portland State University, OR
MBA Business Administration, Portland State University, OR

Kuhn, Lauren L.
Instr/Social Science
BA Anthropology, U of CA, San Diego (UCSD), CA
MS Social Work, San Diego State University, CA

Kurzet, Reuel
Instr/ESOL
BA English, Washington Univ St Louis, MO
MA English, University of Minnesota, MN
PHD Educational Policy & Mgmt, University of Oregon, OR

Laaksio, Marta A.
Spec/Student Resource
BA Liberal Arts, U of CA/Santa Barbara, CA
MA English, University of Victoria, BC

Lafl, Jeff R.
Mgr/Alt Prog & Compliance
BA English, Lewis & Clark College, OR
MAT Language Arts, Lewis & Clark College, OR
MPA Public Administration, Portland State University, OR

LaFrance, Jeannie E.
Coord/Illumin Project
BA English, Lewis & Clark College, OR

Lang, Heather J.
Associate Dean/Student Develop
BA Hispanic Studies, Lewis & Clark College, OR
MED Adult Education, Oregon State University, OR

Lankes, Virginia M.
Spec/Employment
BS Education, SUNY C Buffalo, NY
MA English, SUNY C Buffalo, NY
MS Education, Canisius C, NY

Larsen, Lynn A.
Instr/Biology
BS Biology, Portland State University, OR
MS Biology, Portland State University, OR

Larson, Carolyn V.
Online Student Serv Facilitator
BS Philosophy, University of Oregon, OR
MLS Library & Information Science, University of Washington, WA

Larson, Lisa
Spec/Student Res
BA Social Science, Portland State University, OR
MA Education, Concordia Univ St Paul, MN

Larson, Mary J.
Sup/Food Srvcs

Larson, Susan B.
Instr/Dev Ed/Engl
AB Psychology, Stanford University, CA
MAT Social Studies, Lewis & Clark College, OR

Lasselle, Jerome T.
Instr/Bus Admin
BA Business, Claremont Mens College, CA
JD Law Enforcement, Lewis & Clark College, OR
MBA Business, University of Portland, OR

Lave, Barbara R.
Instr/Comput Appl/Office Syst
BS Business Education, Oregon State University, OR
MED Business Education, Oregon State University, OR

Lawrence, Michael D.
Instr/Bus Admin
AA Business, Clark College, WA
BA Finance, University of Oregon, OR
MBA Business, University of Oregon, OR

Le Guin, Caroline D.
Instr/Comp & Lit
BA English Literature, University of York, UK
MA English, Indiana U Bloomington, IN

Le, Benjamin B.
Sr Systems Admin
AAS Computer Operator, Portland CC, OR

Leavitt, Scot M.
Instr/Math
BA Mathematics, Macalester C, MN
MS Mathematics, University of Oregon, OR

Lee, Hal
Counselor
BA Music, Maryhurst University, OR
BS Arts & Letters, Portland State University, OR
MA Counseling Psychology, Lewis & Clark College, OR

Lee, Lorie
Spec/Acad Advising
BS Business Management, Portland State University, OR

Lee, Mathilda T.
Spec/Student Res
BA Psychology, University of Washington, WA
MSW Social Work, University of Washington, WA

Lee, Yen N.
Accountant III
BS Accounting, Portland State University, OR
BA Finance, Portland State University, OR

LeMieux, Darcie Y.
Instr/Interp Tng
BA Sociology, Gallaudet U, DC
MED Special Ed: Hearing Impaired, Lewis & Clark College, OR

Lemos, Marcio A.
Spec/Int’l Ed Program
JD Law, Catholic U Pernambuco, Brazil

Levine, Jennifer J.
Spec/Learning Skills
MS, Ed Policy, Foundation & Admin, Portland State University, OR

Liang, Li
Instr/Comp Sci/CIS
MS Computer Science, Portland St Univ, OR

Lien, Kevin J.
Instr/Biology
BS Biology, Stanford University, CA
MA Education, University of Portland, OR
MS Biology, Portland State University, OR

Lincoln, Eddie R.
Coord/Business Service
BBA Marketing, University of Portland, OR

Lindahl, Eva J.
Instr/Optical Med Tech
CERT Ophthalmic Medical Technology, University of Minnesota

Lindsey, Edward D.
Instr/Fire Protection Tech
AAS Fire Protection Technology, Portland CC, OR
BS Speech Communication, Portland State University, OR
MBA Public Admin, Portland State University, OR

Staff
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linn, Barbar H.</td>
<td>Mgr/Bond Facilities Project</td>
<td>BS Sociology, Santa Clara University, CA, MAR Sociology, Southern CA Inst of Archtrct, CA</td>
</tr>
<tr>
<td>Lippert, David E.</td>
<td>Coord/Digital Services</td>
<td>BS English, Willamette University, OR</td>
</tr>
<tr>
<td>Lipman, Meryl D.</td>
<td>Mgr/Community Relations</td>
<td>BA International Studies, American University</td>
</tr>
<tr>
<td>Littrell, Tanya R.</td>
<td>Instr/Phys Ed</td>
<td>BS Physical Education, University of Oregon, OR, MS Human Performance, Oregon State University, OR, PHD Exercise and Sport Science, Oregon State University, OR</td>
</tr>
<tr>
<td>Liu, Diana F.</td>
<td>Accountant II</td>
<td></td>
</tr>
<tr>
<td>Loaizon, Maria Esther V.</td>
<td>Instr/ABE/GED</td>
<td>BA Child Development, Maryknoll College, Philippines, MA Psychology, Ateneo de Manila, Philippines</td>
</tr>
<tr>
<td>Long, Kevin M.</td>
<td>Instr/Welding</td>
<td>BFA Sculpture, Pacific NW College of Art, OR</td>
</tr>
<tr>
<td>Locke, Sue A.</td>
<td>AA Nursing, Chemeketa, CC, OR</td>
<td></td>
</tr>
<tr>
<td>Loopeker, Sarah M.</td>
<td>Coord/Fin Aid</td>
<td>BA Liberal Studies, University of Montana, MT</td>
</tr>
<tr>
<td>Londraville, Craig E.</td>
<td>Instr/Campus Tech Serv</td>
<td></td>
</tr>
<tr>
<td>Longueil, Kevin M.</td>
<td>Spec/Acad Advising</td>
<td></td>
</tr>
<tr>
<td>Love, Theresa M.</td>
<td>Instr/Dev Ed</td>
<td>BA Drama, Humboldt State University, CA, MFA English, U of California/Davis, CA, MFA Drama, U of California/Davis, CA</td>
</tr>
<tr>
<td>Lowgren, Andrea</td>
<td>Instr/Hisd</td>
<td></td>
</tr>
<tr>
<td>Luft, Michelle D.</td>
<td>Spec/Acad Advising</td>
<td></td>
</tr>
<tr>
<td>Maazouz, Patricia L.</td>
<td>Instr/Chem</td>
<td>BS Mathematics, University of Saint Mary, KS, BS Chemistry, University of Saint Mary, KS, PHD Chemistry, U Notre Dame, IN</td>
</tr>
<tr>
<td>Macaulay, Leslie A.</td>
<td>Instr/Auto Serv Tech</td>
<td>AAS Automotive Service Technology, Portland CC, OR, AS Radio, Blue Mountain CC, OR, BS Speech, Oregon State University, OR</td>
</tr>
<tr>
<td>MacClise, James D.</td>
<td>Mgr/Wrkfrt Dev Oper</td>
<td>AA Business Administration, Portland CC, OR</td>
</tr>
<tr>
<td>Madrigal, Gerardo L.</td>
<td>Spec/Employment/Bilingual</td>
<td></td>
</tr>
<tr>
<td>Maginn, Dana J.</td>
<td>Spec/Learning Skills</td>
<td>BA English, University of Oregon, OR, CERT Linguistics, San Diego State University, CA</td>
</tr>
<tr>
<td>Magnuson, Joel C.</td>
<td>Instr/Econ</td>
<td>BS Economics, Portland State University, OR, PHD Economics, University of Utah, UT</td>
</tr>
<tr>
<td>Mahon-Decker, Marie T.</td>
<td>International Stdnt Advisor</td>
<td>BA Social Work, University of Montana, MT</td>
</tr>
<tr>
<td>Mainville, Stephen J.</td>
<td>Instr/Comp &amp; Lit</td>
<td>BA English SUNY Oswego, NY, MA English, SUNY Oswego, NY, PHD English, U Oklahoma, OK</td>
</tr>
<tr>
<td>Majidi, Abdelmajid</td>
<td>Mgr/Workforce Dev</td>
<td>BBA International Business, Washington St University, WA</td>
</tr>
<tr>
<td>Maldonado, Brenda I.</td>
<td>Coord/Rele Multicultural/Bil</td>
<td>BA English, Washington St University, WA, MA Higher Ed Administration, Washington St University, WA</td>
</tr>
<tr>
<td>Maldonado, Tanya</td>
<td>Spec/Student Employment</td>
<td>BA Psychology, U of CA/Santa Cruz, CA, MA College Student Personnel, San Jose State University, CA, MA Education Counseling, San Jose State University, CA</td>
</tr>
<tr>
<td>Malone, Gregory S.</td>
<td>Mgr/Tech Services</td>
<td>BS Business Administration, Eastern Oregon University, OR, MBA Business Administration, Oregon State University, OR</td>
</tr>
<tr>
<td>Manchester, Kimberly A.</td>
<td>Instr/Vis Arts</td>
<td>BA Studio Arts, Mills College, CA, MFA Visual Arts, U of CA, San Diego, CA</td>
</tr>
<tr>
<td>Manzini, Ainulmutara</td>
<td>Spec/Learning Skills</td>
<td>BA Psychology, University of Rochester, BA History, University of Rochester, MS Educational Policy &amp; Mgmt, Portland State University, OR</td>
</tr>
<tr>
<td>Mann, Amy V.</td>
<td>Instr/Nursing</td>
<td>BS Nursing, RN, East Central University, OK, MSN Family Nurse Practitioner, Concordia College, WI</td>
</tr>
<tr>
<td>Mann, Susan P.</td>
<td>Instr/Speech</td>
<td>BA Journalism, Oregon State University, OR, MS Management/Communication, Univ of Portland, OR</td>
</tr>
<tr>
<td>Manolas, Melissa</td>
<td>Instr/Comp &amp; Lit</td>
<td>BA English, Loyola U, LA, MA Comparative Literature, Louisiana St University, LA</td>
</tr>
<tr>
<td>Marciniak, Michael</td>
<td>Instr/Math</td>
<td>BA Biological Sciences, Indiana U Bloomington, IN, MS Statistical Science, George Mason U, VA, MST Teaching, Virginia Commonwealth U, VA</td>
</tr>
<tr>
<td>Marks, Kelly L.</td>
<td>Coord/Campus Operations</td>
<td>BS Psychology, Portland State University, OR, MS Ed Policy, Foundation &amp; Admin, Portland State University, OR</td>
</tr>
<tr>
<td>Marquez-Oldham, Tammy E.</td>
<td>Instr/BSS/IT &amp; Small Bus Dev</td>
<td>BS Human Dev &amp; Family Studies, Warner Pacific College, MBA Business Administration, George Fox University, OR</td>
</tr>
<tr>
<td>Marsh, Frances</td>
<td>PAC Rental/Tech Coord</td>
<td>BA Theater, Tarleton St, U, TX, MFA Theater Arts, Willamette State University, CA</td>
</tr>
<tr>
<td>Marshall, Bonnie L.</td>
<td>Instr/Dental Assst</td>
<td>AAS Vocational Teacher Education, Portland CC, OR, ACERT Dental Assistant, Portland CC, OR</td>
</tr>
<tr>
<td>Marshall, Marilyn F.</td>
<td>Instr/Alt/Ap Lang Clr</td>
<td>BS Psychology, Willamette University, OR, MS Education, Portland State University, OR</td>
</tr>
<tr>
<td>Martin, Amber N.</td>
<td>Instr/Nursing</td>
<td>BSN Nursing, Linfield College, OR, MN Family Nurse Practitioner, Washington St University, WA</td>
</tr>
<tr>
<td>Martin, Anne-Marie</td>
<td>Instr/World Lang/Spanish</td>
<td>BA Spanish, University of Puget Sound, WA, BA Economics, University of Puget Sound, WA, MA Romance Languages, University of Washington, WA</td>
</tr>
<tr>
<td>Martin, Carol R.</td>
<td>Coord/Comm Ed Program</td>
<td>BA Psychology, C Wooster, OH, MED Education, Oregon State University, OR</td>
</tr>
<tr>
<td>Martin, Kristen J.</td>
<td>Spec/Club and Programs</td>
<td>BA International Relations, Roanoke College, VA, MS Student Affairs Counseling, Radford Univ, VA</td>
</tr>
<tr>
<td>Martinez Zapata, Eduardo</td>
<td>Dir/Stud Suppt Ser Prog</td>
<td>BS Business Administration, Oregon State University, OR</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td>Mathern, Rebecca A.</td>
<td>Dir/Enroll Srvs/Registrar</td>
<td>BA Political Science, University of Minnesota, MN, MA Liberal Studies, University of Minnesota, MN</td>
</tr>
<tr>
<td>Mathews, John H.</td>
<td>Spec/Student Res</td>
<td>AA Social Service, Foothill College, CA, BA Sociology, San Jose State University, CA</td>
</tr>
<tr>
<td>Maurice, John H.</td>
<td>Mgr/Server Administration</td>
<td></td>
</tr>
<tr>
<td>Maxwell, Michele L.</td>
<td>Spec/Student Res</td>
<td>AB Linguistics, U Michigan Ann Arbor, MI, MBA International Business, Boston C, MA</td>
</tr>
</tbody>
</table>

Portland Community College • 2010–2011
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Program</th>
<th>Degree(s) 1</th>
<th>Institution(s)</th>
</tr>
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<tbody>
<tr>
<td>McBeth, Lynn</td>
<td>Instr/Dev Ed</td>
<td></td>
<td>BA English, Westmont College, CA</td>
</tr>
<tr>
<td>McCann, Vivian I.</td>
<td>Instr/Psych</td>
<td></td>
<td>BA Political Science, CA Polytechnic State U, CA</td>
</tr>
<tr>
<td></td>
<td>MA Social Ecology, U of California/Irvine, CA</td>
<td></td>
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</tr>
<tr>
<td>McDowell, Michael J.</td>
<td>Instr/Comp &amp; Lit</td>
<td></td>
<td>AB English, Stanford University, CA</td>
</tr>
<tr>
<td></td>
<td>MA English, U of Virginia, VA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHD English, University of Oregon, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McEwen, Randall J.</td>
<td>District Vice President</td>
<td></td>
<td>BS Electrical Engineering, Stanford University, CA</td>
</tr>
<tr>
<td></td>
<td>MS Electrical Engineering, Stanford University, CA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McGuire, Marilyn I.</td>
<td>Dir/Nursing</td>
<td></td>
<td>BS Nursing, Oregon Health Science U, OR</td>
</tr>
<tr>
<td></td>
<td>MS Adult Health &amp; Illness, Oregon Health Science U, OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McKenna, Ruth</td>
<td>Counselor</td>
<td></td>
<td>BA Social &amp; Behavior Studies, U S Florida, FL</td>
</tr>
<tr>
<td></td>
<td>MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
<td></td>
<td></td>
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<tr>
<td>McLaughlin, J C.</td>
<td>Spec/Student Res</td>
<td></td>
<td>BA Liberal Arts, Christian Heritage College, CA</td>
</tr>
<tr>
<td>McMillen, Rachel E.</td>
<td>Coord/Resource Ctr</td>
<td></td>
<td>BA English, U of CA/Santa Barbara, CA</td>
</tr>
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<td>MA Career Counseling, California St U, Northridge, CA</td>
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<td>McMurry, Melody L.</td>
<td>Instr/Sociol</td>
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<td>BS Sociology, Portland State University, OR</td>
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<td>MST Sociology, Portland State University, OR</td>
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<td>EDD Educational Leadership, Portland State University, OR</td>
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<td>McNerthney, Alexie M.</td>
<td>Instr/Biology</td>
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<td>BS Zoology, University of Washington, WA</td>
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<td>MS Zoology, Colorado State University, CO</td>
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<td>Spec/Instructional Comp</td>
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<td>BS Psychology, University of Oregon, OR</td>
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<td>Mead, Tanya G.</td>
<td>Instr/Education</td>
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<td>BA Russian, Colby C, ME</td>
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<td>BA English, Colby C, ME</td>
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<td>MA Intercultural Relations, Antioch University McGregor, OH</td>
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<td>Memmott, Tracie D.</td>
<td>Spec/Student Res</td>
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<td>BS Psychology, Eastern Oregon University, OR</td>
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<td>Menchu, Luis A.</td>
<td>Web Services Manager</td>
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<td>BS Aeronautical Engineering, Texas A &amp; M University, TX</td>
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<td>MBA Marketing, City University of Seattle, WA</td>
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<td>Instr/Welding</td>
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<td>ACERT Welding, Tulsa Welding School</td>
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<td>Mery, John C.</td>
<td>Instr/Music</td>
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<td>BM Music, University of Arizona, AZ</td>
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<td>MM Music, University of Arizona, AZ</td>
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<td>Instr/Math</td>
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<td>BS Mathematics, CA Polytechnic State U, CA</td>
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<td>MS Mathematics, Northern Arizona University, AZ</td>
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<td>Dir/Inst Health Care</td>
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<td>BS Education, U of Northern Iowa, IA</td>
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<td>MBA Business Administration Univ of Iowa, IA</td>
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<td>Spec/Comm Resource</td>
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<td>BA Multimedia, University of Oregon, OR</td>
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<td>Instr/Arch Drafting</td>
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<td>BARC Architecture, Washington St University, WA</td>
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<td>BS Architecture, Washington St University, WA</td>
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<td>MA Architecture, University of Idaho, ID</td>
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<td>Instr/Graphic Design</td>
<td></td>
<td>BFA Illustration, Art Center College of Design, CA</td>
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<td>MA Illustration, Syracuse Univ Main Campus, NY</td>
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<td>Instr/Pers Health</td>
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<td>BS Health Education, University of Oregon, OR</td>
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<td>MS Health Education, Portland State University, OR</td>
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<td>Coor/Bus Trng &amp; Ed Dev</td>
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<td>AS Nursing, U Guam, OT</td>
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<td>BS Science, Portland State University, OR</td>
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<td>Coor/Acad Advising</td>
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<td>Instr/ESOL</td>
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<td>BA French, University of Minnesota, MN</td>
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<td>CERT Teaching ESL, Hamline U, MN</td>
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<td>MAT English as a Second Language, University of Arizona, AZ</td>
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<td>Miller, Deborah W.</td>
<td>Div Dean</td>
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<td>BS Material Science Engineer, U of Cali/Berkeley, CA</td>
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<td>MBA Business Admin, University of Portland, OR</td>
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<td>Instr/Psych</td>
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<td>Instr/Early Educ &amp; Fam Studies</td>
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<td>BS Psychology, Mills College, CA</td>
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<td>MA Human Development, Pacific Oaks College, CA</td>
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<td>Spec/Marketing</td>
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<td>Counselor</td>
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<td>BS Psychology, Portland State University, OR</td>
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<td>MA Counseling Psychology, Lewis &amp; Clark College, OR</td>
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<td>Instr/Nursing</td>
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<td>AA Nursing, College of San Mateo, CA</td>
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<td>BS Nursing, Sonoma State University, CA</td>
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<td>Instr/Physics</td>
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<td>BS Physics, Saratov State Univ</td>
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<td>Spec/Learning Skills</td>
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<td>BA Spanish, Whitworth College, WA</td>
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<td>Mg/Technology Solutions Services</td>
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<td>Spec Employment</td>
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<td>Dir/Study Suppt Ser Prog</td>
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<td>BA Community Serv Public Affairs, Seattle University, WA</td>
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<td>MED Curriculum &amp; Instruction, Chapman University, CA</td>
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<td>Instr/Crim Justice</td>
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<td>BS Education, University of Texas El Paso, TX</td>
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<td>Instr/Comp Sci</td>
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<td>BA Computer Science, Western Oregon University, OR</td>
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<td>MS Interdisciplinary Studies, Western Oregon Univ, OR</td>
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<td>Spec/Acad Advising</td>
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<td>Spec/Admissions</td>
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<td>BS Communication, Montana State U/Bozeman, MT</td>
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<td>Instr/Vis Arts</td>
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<td>BFA Studio Arts, U Colorado Boulder, CO</td>
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<td>MFA Ceramics, Alfred U, NY</td>
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<td>Instr/Auto Serv Tech</td>
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<td>Coord/Child Care Svcs</td>
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<td>BA Political Science, California St UCL A., CA</td>
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<td>MA Education, Concordia Univ St Paul, MN</td>
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<td>Moscicki, John M.</td>
<td>CBI Department Director</td>
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<td>BA Psychology, Florida State Univ, FL</td>
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<td>EDD Educational Tech &amp; Comm, Columbia Univ, City of NY, NY</td>
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<td>Mostafavi, Seyed A.</td>
<td>Instr/Comp Info Sys</td>
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Mueller, Michelle D
Instr/Architecture
BA History, Vassar College, NY
MAR Architecture, Univ of Oregon, OR

Mulligan, Diane L.
Dean/Student Dev
BS Community Serv Public Affairs, Univ of Oregon, OR
MS Curriculum & Instruction, University of Oregon, OR
PHD Educational Policy & Mgmt, University of Oregon, OR

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Spec/Learning Skills
BA History, Lewis & Clark College, OR

Murray, Pamela K.
Div Dean
BS Management, University of Oregon, OR
BS Marketing, University of Oregon, OR
MPA Public Administration, University of San Francisco, CA

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BS Education: Math, U of IL Urbana/Champaign, IL
MA Education, Chapman University, CA
MS Mathematics, Portland State University, OR

Naigus, Neal B.
Mgr/Community Rel
BA Psychology, New York U, NY
MS Counselling, Hunter College, NY

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Instr/Comp Info Sys
BS Business Administration, San Francisco State U, CA
MBA Business Administration, Portland State University, OR

Neill, Sara M.
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BA Psychology, Lewis & Clark College, OR
MA Counselling Psychology, Lewis & Clark College, OR

Nelson, Emily F.
Instr/Math
BS Mathematics, Oregon State University, OR
MST Mathematics, Portland State University, OR

Nelson, Kenneth A.
Mgr/centralDist Svcs

Nelson, Tara M.
Instr/Mech Eng
BS Civil Engineering, Oregon State University, OR

Neps, Alexandra J.
Instr/Biology
BA Psychology, U St Francis, IL
BA Biology, U St Francis, IL
MST Biology, Portland State University, OR

Neuburger, Kimberly A.
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BA Mathematics, Portland State University, OR

Nhun, Cheryl
Spec/Employment
BS Psychology, Lewis & Clark College, OR

Nicholson, Jill P.
Instr/Alt Prg/Bilingual
BA French, U of California/Berkeley, CA
MAT French, Sch Intrafl Training, VT
MAT Tesol, Sch Intrafl Training, VT

Nickerson, Robert E.
Spec/Employment
BA Political Science, Howard University, DC
MED Education, Oregon State University, OR

Nording, April A.
Spec/Student Res
BA Foreign Language, University of Oregon, OR

Norris, Susan G.
Instr/Comp Info Sys
BS Business Administration, Portland State University, OR
MBA Business Administration, DePaul U, IL

Norton, Sharlene K.
Supv/Telecommunications Srvcs
BS Interdisciplinary Studies, Marylhurst University, OR

Nunez, Ellen E.
Instr/ABE/GED
BS Liberal Studies, Oregon State University, OR
MED Adult Education, Oregon State University, OR

Nunez, Melinda L.
Spec/Comm Resource
BS Ethnic Studies, University of Oregon, OR

Obradovich, Anthony F.
Instr/Psych
BA Psychology, Gonzaga University, WA
MA Psychology, Ohio St Univ Main Office, OH
PHD Psychology, Ohio St Univ Main Office, OH

Ocken, Rebecca
Mgr/Bond Facilities Proct
BA History, Univ of Washington, WA
MA Urban & Regional Planning, Univ of Oregon, OR

O’Connor, Maureen E.
Instr/Phys Ed
BS Physical Education, Bradley U, IL
MST Physical Education, Portland State University, OR

Oliveros, D Claire
Coord/Retention Multicultural
BA Speech Communication, Western Oregon Univ, OR
MS Ed Policy, Foundation & Admin, Portland St Univ, OR
PHD Education, University of Oregon, OR

O’Reilly, Annemarie C.
Counselor
BA Liberal Arts, Saint Mary’s College of CA
MA Counseling Psychology, Pacifica Graduate Inst, CA

O’Reilly, Lily S.
Instr/Dev Ed/Math
BS Mathematics, SUNY C Fredonia, NY
MS Mathematics, SUNY C Fredonia, NY

O’Shaughnessy, Kathleen K.
Instr/Comp & Lit
BA English, Tufts U, MA
MA English, U New Hampshire, NH
MFA Creative Writing, U N Carolina Greensboro, NC

Ouchida, Bart D.
Instr/Auto Serv Tech
AAS Automotive Technology, Oregon Inst of Tech, OR
BS Automotive, Diesel Tech, Oregon Inst of Technology, OR

Pace, Gayle
Instr/Comp Appl/Office Syst
BA Education, Pacific Lutheran U, WA
MA Business, Western Washington Univ, WA

Paez, Karen N.
Counselor
BA Psychology, Auburn U Main Camp, AL
MS Counseling, University of Oregon, OR
PHD Counseling Psychology, University of Oregon, OR

Palmer, Gary D.
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BA English, SUNY C Buffalo, NY
MA Education, University of Michigan, MI

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Coordinating Access Resources
AA General Studies, Portland CC, OR
BA Social Science, Portland State University, OR
MS Special Education, Portland State University, OR

Pangburn, Wendy C.
Spec/Employment

Parks, James R.
Instr/Crim Justice
BS Admin of Justice, American University
JD Law, Lewis & Clark College, OR

Parr, Michelle R.
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Passalacqua, Michael
Instr/Comp Appl/Office Sys
BS Information Systems, San Diego State University, CA

Paul, Christine L.
Coord/Women’s Resource
AA Humanities, Portland CC, OR
BA English, Portland State University, OR
MSW Social Work, Portland State University, OR

Pedan, Kelly J.
Instr/Comp Appl/Office Sys
BS Business Administration, Oregon State University, OR
MED Business Administration, Oregon State University, OR

Pelinka, David L.
Mgt/TSS

Perry, Jacob E.
Spec/Employment
BS Business Administration, Oregon State Univ, OR

Perry, Jeffrey S.
Instr/Math
BA Mathematics, California St U, Long Beach, CA
MA Mathematics, California St U, Long Beach, CA

Perry, Kirk H.
Instr/English/Comp
BA English, Oregon University, OR
MA English, U Massachusetts Amherst, MA

Persen, John A.
Coord/MWESB Procurement
BA Business Administration, Warner Pacific College, OR
MS Organization & Management, Warner Pacific College, OR

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BA Spanish, Syracuse U Main Camp, NY
MA Library/Media Assistant, Portland State University, OR

Phelps, Steven H.
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BA Management, George Fox University, OR
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Phillips, Steven H.
Instr/Aviation Maint Tech
AAS Aviation Science, Lane CC, OR
AAS Aviation Maintenance Technology, Portland CC, OR
Rinker, Suellen L.
Spec/Acad Advising
BA Psychology, Central Washington U, WA
MA Counseling & Guidance, University of Sarasota, FL

Ritchie, Donald N.
Spec/Acad Advising
BS Technical Journalism, Oregon State University, OR
MS Counseling, Portland State University, OR

Rivas, Ishmael D.
Instr/CAT Dealer Svc Tech Trg

Roberts, Franklin H.
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BS Information Systems, University of Phoenix, AZ
MBA Business Administration, University of Phoenix, AZ

Roberts, Prudence F.
Instr/Art Hist & Studio Art
BA Liberal Arts, Sarah Lawrence C, NY
MA Liberal Studies, Reed College, OR

Robertson, Kai J.
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BS Home Economics Education, Alcorn St U, MS
MS Education, Portland State University, OR

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BS Natural Resources Management, Ohio St U, Main Camp, OH
MS Biology, U Minnesota Duluth, MN
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BA French, Oregon State University, OR
BA Physical Education, Oregon State University, OR
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BA Spanish, Oregon State University, OR

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AA Liberal Studies, Fresno City College, CA
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BA Spanish, University of Oregon, OR
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MAR Architecture, University of Oregon, OR
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AAS Automotive Service Technology, Portland CC, OR
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MN Nursing Administration, George Mason U, VA

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BS Occupational Therapy, W Michigan U, MI
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BA Political Science, Whitman College, WA
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BS Exercise and Sport Science, Oregon State University, OR
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MA Individualized Program, University of Oregon, OR
MD Medicine, Oregon Health Science U, OR

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AS General Studies, Portland CC, OR
BS Social Science, Portland State University, OR

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AA Oregon Transfer, Portland CC, OR
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Dir/Child Care Center
BS Child Development, University of Idaho, ID
MED Adult Education, Unv of Phoenix, AZ

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MA Spanish, Portland State University, OR

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CERT Test, U of California/Riverside, CA  
MA English, U of CA/ Santa Barbara, CA

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Spec/Comm Resource  
MS Crop Soil Science, St Petersburg U-Hum/Soc, Rus

Zweben, Harry T.  
Counselor/Rehab Guid  
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