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The Portland Community College Catalog is published each academic year. This catalog is effective Fall 2014 through Summer 2015.

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. Updates and corrections may be made from time to time to the online catalog; in the event of a discrepancy between a printed copy of the catalog and the online catalog, the online catalog will be considered the catalog of record.
ADMISSIONS

STEP 1 - APPLY FOR ADMISSION

Apply online at www.pcc.edu/admissions. If you’re participating in one of our innovative dual enrollment (co-admit) programs, you’ll use a different application. For more information, go to www.pcc.edu/dual.

Admission Criteria (p. 5)  
Special Admissions Programs (p. 5)  
High School Partnerships (p. 6)  
Degree Partnerships (p. 6)

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.

For more information, go to www.pcc.edu/residency.

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 coursework, department approval or an instructor’s approval for enrollment.

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

SPECIAL ADMISSIONS PROGRAMS

INTERNATIONAL STUDENTS

www.pcc.edu/about/international/admissions

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

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

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

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

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

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

UNDERAGE STUDENTS

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

STUDENTS UNDER 16 YEARS OF AGE

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

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

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

Requests for exception to the admission policy should include:

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

If you are home schooled you are required to submit:

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

PORTLAND COMMUNITY COLLEGE  ■  2014-2015

appointment. Both you and your parent/guardian are required to attend.

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

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

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

HIGH SCHOOL PARTNERSHIPS

PCC DUAL CREDIT
971-722-7737
www.pcc.edu/dualcredit

About 50 high schools (some outside of the PCC district) participate in PCC’s Dual Credit Program. The Dual Credit Program provides opportunities for high school students to earn PCC credit for advanced level courses that are taught at their local high schools by PCC qualified faculty. These classes are equivalent to courses offered on a PCC campus. High school students may earn PCC credits in these “articulated” (dual credit) courses at not cost, saving both time and money in their educational pursuits. Dual Credit classes are recorded on an official PCC transcript.

Both Career and Technical Education (CTE), and Lower Division or University Transfer courses are available. More than 25 PCC CTE programs, are offered and linked to Career Pathways. Examples include Drafting, Office Systems, Health Services, Early Childhood Education, Auto Service Technology, Building Construction, Engineering, Machine Manufacturing, Fire Protection, and Welding.

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

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

EXPANDED OPTIONS PROGRAM (EOP)

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

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

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

EOP is one of several opportunities for high school students to earn PCC credit.

OTHER PROGRAMS

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

DEGREE PARTNERSHIP PROGRAMS

www.pcc.edu/admissions/dual

PCC OFFERS DUAL ADMISSION OR CO-ENROLLMENT PROGRAMS WITH

Portland State University
Oregon State University
Oregon Institute of Technology
Western Governors University
Concordia University
Marylhurst University
Pacific University
Linfield College - Degree Completion, Portland Campus

The benefits of these programs include:

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

STEP 2–MAKE PAYMENT ARRANGEMENTS

www.pcc.edu/tuition

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

TUITION AND FEES

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

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

OTHER COMMON FEES

www.pcc.edu/resources/tuition-fees/other-fees.html

There are other fees that may apply during your time as a student, please view the website for details about these fees.

FINANCIAL AID

www.pcc.edu/fa

College can be expensive but there are funds available to help with college costs including tuition, books, and living expenses. There are many steps in the financial aid process and it can take several months to receive financial aid. The first steps are:

1. Fill out a Free Application for Federal Student Assistance (FAFSA). The application can be accessed as fafsa.ed.gov
2. Get admitted to PCC. If you haven’t take a course at PCC in the last two years you need to apply for admission at www.pcc.edu/admissions
3. Visit the financial aid website at www.pcc.edu/fa. The financial aid website will walk you through the process of receiving financial aid, starting with filling out the application and end with how to manage your financial aid over the course of your college career.

We strongly recommend you begin the financial aid process as soon as possible and regularly check your MyPCC email for updates after you file your FAFSA.

VETERANS’ BENEFITS

www.pcc.edu/vets

PCC Veteran Services is here to help veterans and their dependents use their VA educational benefits to support their college expenses. We recognize the sacrifice of those who have served in the United States Armed Forces, and we are honored to assist you in utilizing your benefits to your best advantage. PCC is dedicated to providing students with effective access to any VA educational benefits they may be entitled to. Please refer to the steps and information provided on our website at www.pcc.edu/vets.

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

SCHOLARSHIPS

www.pcc.edu/scholarships

AGENCY OR COMPANY SPONSORSHIP

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

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

SENIOR OPTION

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

PAYMENT PLAN OPTIONS

For available payment plan options visit www.pcc.edu/payplan.
PREPARING FOR CLASSES

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.

STEP 4–ATTEND A NEW STUDENT ORIENTATION
www.pcc.edu/orientation

The orientation will give you tips about making the most of your college experience. Orientation is required for all first-time college students, and is optional for those with prior college credits. You can attend an in-person orientation or complete it online.

STEP 5–MEET WITH AN ADVISOR
www.pcc.edu/advising

An advisor can help you plan a course of study to achieve your goals at PCC. You can meet with an advisor in person after orientation. If you have credits from other colleges, bring copies of your grades or unofficial transcripts to your advising session.
REGISTRATION

STEP 6—REGISTER FOR CLASSES

www.pcc.edu/registration

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

MYPCC ACCOUNT

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

REGISTRATION RESPONSIBILITIES

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. While you may have your classes deleted due to lack of payment arrangement, missing prerequisites or academic suspension, you are personally responsible for dropping or withdrawing any class in which you no longer wish to be registered, including waitlisted classes. Even if you do not attend class, you are responsible for dropping or withdrawing. If you fail to drop within the refund period, you will be responsible for the charges. Check class information carefully, and take care of any mistakes as soon as possible. If you fail to withdraw within the withdrawal period, you will receive a grade for the course.

STEP 7—MANAGE YOUR REGISTRATION

PAY CLOSE ATTENTION TO DROP AND WITHDRAWAL DEADLINES

For drop and withdrawal deadlines for your registered courses:

1. Log into MyPCC
2. From your Home tab, locate the Registration Services channel
3. Click on “View My Drop & Withdraw Dates”
4. Select the term and click “Submit”

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

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

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

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

LATE REGISTRATION

Approval from the instructor is required to add a class once it has started through the late add period. Late registration must be completed online prior to the late add deadline. After that date, your cannot enroll in the class. Late registration cannot occur after the late add deadline.

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

Students add classes online via MyPCC. Approval from the instructor is required to add a class once it has started through the late add period. Late registration must be completed online prior to the late add deadline, which varies by class length and type.

The deadline to drop and have charges removed varies by class length and type. The drop deadline for credit classes is located in the Registration Services channel and on the detail schedule in MyPCC.

WITHDRAWING FROM COLLEGE

You may formally withdraw from class via my.pcc.edu. If you have applied for financial aid or Veterans’ benefits, you must also notify the appropriate office of your intention to withdraw.

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

CONTINUING EDUCATION CLASSES

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

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

STEP 8–ARRANGE TRANSPORTATION
www.pcc.edu/parking

ON-CAMPUS PARKING
Vehicles parked on any PCC campus and roadway between 7 am and 10 pm Monday through Friday must display a current PCC parking permit. PCC also requires visitors to display a parking permit. For a current fee schedule, visit the website.

SHUTTLE SERVICES
Go to http://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 credits. Passes are available through the campus Student Account Services. 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.
PAY YOUR BILL

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

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

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

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

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

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

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

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

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

TAX CREDITS FOR EDUCATION (1098-T)
The American Opportunity (Hope Credit extended) and the Lifetime Learning Credit are education credits that can help offset the costs of education. To determine your eligibility please consult your tax advisor. PCC staff cannot help with tax related questions.

If you plan to claim an educational tax credit, your social security number (SSN) is required for tax reporting. To update your SSN go to the My Records link on MyPCC. A form 1098-T is available January 31 each year to students who were enrolled in credit courses. PCC delivers all 1098-T forms electronically via MyPCC. Students may access their forms online by selecting the desired tax year. Students who wish to receive a 1098-T form by mail must contact the PCC Business Office prior to the end of the tax year.
GRADUATION

STEP 10–GRADUATION

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

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

Graduating students will receive diplomas by mail six to eight weeks after the degree or certificate has been awarded. The diploma will be mailed to the diploma address submitted by the student or the address of record for the student, if a specific diploma address is not provided.

TRANSCRIPTS

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

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

Enrollment Services
Portland Community College
P.O. Box 19000
Portland, Oregon 97280
## CALENDAR OF INSTRUCTION

### SUMMER 2014

<table>
<thead>
<tr>
<th>Term</th>
<th>Start Date</th>
<th>End Date</th>
<th>Final Exams</th>
<th>Length of Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 1</td>
<td>Jun 23</td>
<td>Sept 6</td>
<td>Sept 1-6</td>
<td>11 weeks</td>
</tr>
<tr>
<td>Summer 8</td>
<td>Jun 23</td>
<td>Aug 16</td>
<td>Aug 11-16</td>
<td>8 weeks</td>
</tr>
<tr>
<td>Summer A</td>
<td>Jun 23</td>
<td>Jul 19</td>
<td>Jul 14-19</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer B</td>
<td>Jul 21</td>
<td>Aug 16</td>
<td>Aug 11-16</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer D</td>
<td>Aug 18</td>
<td>Sept 13</td>
<td>Sept 8-13</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer J</td>
<td>Jun 23</td>
<td>Jul 26</td>
<td>Jul 21-26</td>
<td>5 weeks</td>
</tr>
<tr>
<td>Summer K</td>
<td>Jul 28</td>
<td>Aug 30</td>
<td>Aug 25-30</td>
<td>5 weeks</td>
</tr>
<tr>
<td>Summer N</td>
<td>Jun 23</td>
<td>Aug 23</td>
<td>Aug 18-23</td>
<td>9 weeks</td>
</tr>
<tr>
<td>Summer S</td>
<td>Jun 28</td>
<td>Sept 7</td>
<td>Sept 6-7</td>
<td>11 weeks</td>
</tr>
<tr>
<td>Summer T</td>
<td>Jun 23</td>
<td>Aug 30</td>
<td>Aug 25-30</td>
<td>10 weeks</td>
</tr>
<tr>
<td>Summer U</td>
<td>Jun 23</td>
<td>Jul 18</td>
<td>Jul 13-18</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer V</td>
<td>Jul 21</td>
<td>Aug 13</td>
<td>Aug 8-13</td>
<td>4 weeks</td>
</tr>
</tbody>
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### FALL 2014

<table>
<thead>
<tr>
<th>Term</th>
<th>Start Date</th>
<th>End Date</th>
<th>Final Exams</th>
<th>Length of Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2014</td>
<td>Sep 22</td>
<td>Dec 14</td>
<td>Dec 8-14</td>
<td>12 weeks</td>
</tr>
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### WINTER 2015

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<th>End Date</th>
<th>Final Exams</th>
<th>Length of Term</th>
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</thead>
<tbody>
<tr>
<td>Winter 2015</td>
<td>Jan 5</td>
<td>Mar 22</td>
<td>Mar 16-22</td>
<td>11 weeks</td>
</tr>
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</table>

### SPRING 2015

<table>
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<th>Term</th>
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</thead>
<tbody>
<tr>
<td>Spring 2015</td>
<td>Mar 30</td>
<td>Jun 14</td>
<td>Jun 8-14</td>
<td>11 weeks</td>
</tr>
</tbody>
</table>

### SUMMER 2015

<table>
<thead>
<tr>
<th>Term</th>
<th>Start Date</th>
<th>End Date</th>
<th>Final Exams</th>
<th>Length of Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 1</td>
<td>Jun 22</td>
<td>Sep 5</td>
<td>Aug 31-Sep 5</td>
<td>11 Weeks</td>
</tr>
<tr>
<td>Summer 8</td>
<td>Jun 22</td>
<td>Aug 15</td>
<td>Aug 10-15</td>
<td>8 Weeks</td>
</tr>
<tr>
<td>Summer A</td>
<td>Jun 22</td>
<td>Jul 18</td>
<td>Jul 13-18</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer B</td>
<td>Jul 20</td>
<td>Aug 15</td>
<td>Aug 10-15</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer D</td>
<td>Aug 17</td>
<td>Sep 12</td>
<td>Sep 7-12</td>
<td>4 Weeks</td>
</tr>
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<td>Summer J</td>
<td>Jun 22</td>
<td>Jul 25</td>
<td>Jul 20-25</td>
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<td>Summer K</td>
<td>Jul 27</td>
<td>Aug 29</td>
<td>Aug 25-29</td>
<td>5 Weeks</td>
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<tr>
<td>Summer N</td>
<td>Jun 22</td>
<td>Aug 22</td>
<td>Aug 17-22</td>
<td>9 Weeks</td>
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<tr>
<td>Summer S</td>
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<td>Sep 6</td>
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<td>11 Weeks</td>
</tr>
<tr>
<td>Summer T</td>
<td>Jun 22</td>
<td>Aug 29</td>
<td>Aug 25-29</td>
<td>10 Weeks</td>
</tr>
<tr>
<td>Summer U</td>
<td>Jun 22</td>
<td>Jul 17</td>
<td>Jul 12-17</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer V</td>
<td>Jul 20</td>
<td>Aug 13</td>
<td>Aug 8-13</td>
<td>4 Weeks</td>
</tr>
</tbody>
</table>
STUDENT RESOURCES

PCC provides a wide range of student-focused resources in various areas to help a student succeed while enrolled. Most of these services are located at each campus. Please visit their website for the most current information.

Athletics
www.pcc.edu/athletics

Bookstores
www.pcc.edu/bookstore

Career Exploration Centers
www.pcc.edu/careers

Child Care
www.pcc.edu/resources/child-care

Computer Resource Centers
www.pcc.edu/crc

Cooperative Education
www.pcc.edu/careers/coop

Counseling Services
www.pcc.edu/counseling

Disability Services
www.pcc.edu/disability

Fitness and Recreation
www.pcc.edu/programs/pe

Food Services
www.pcc.edu/resources/dining

Galleries
www.pcc.edu/about/galleries

Grant Programs
ROOTS
www.pcc.edu/roots

Educational Talent Search
www.pcc.edu/ets

Multicultural Centers
www.pcc.edu/multicultural

Office of International Education (OIE)
www.pcc.edu/international

Oregon Leadership Institute
www.pcc.edu/oli

Public Safety
www.pcc.edu/about/public-safety

Student Account Services
www.pcc.edu/enroll/paying-for-college

Student Employment
www.pcc.edu/resources/careers/students-grads

Student Exchange
www.pcc.edu/studyabroad

Student Government (ASPCC)
www.pcc.edu/aspcc

Theatre
www.pcc.edu/theatre

Tutoring
www.pcc.edu/tutoring

Women’s Resource Centers
www.pcc.edu/resources/women

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

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

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

Intramurals
www.pcc.edu/resources/recreation/

Library and Media Centers
www.pcc.edu/library
DEGREE, CERTIFICATE, AND COURSE OVERVIEW

Portland Community College operates on the quarter system. The PCC Catalog is published and dated with each academic year, which begins fall term and ends with the next summer term.

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

An edition of the catalog is valid for six academic years. For example, a catalog that takes effect fall term 2014 is only valid through summer term 2020. 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 CONFERS 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.

Note: Effective July 1, 2014, the Oregon University System is restructuring. At the time of publication, no changes are expected to impact degree and program requirements as outlined in this catalog for 2014-2015.

COMPUTER PROFICIENCY: A STATEMENT TO STUDENTS

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

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

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

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 (p. 33) section of the catalog.

ASSOCIATE DEGREE COMPREHENSIVE REQUIREMENTS

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

COMPREHENSIVE REQUIREMENTS

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

2. Residency Requirement:
   • All candidates for a degree at PCC 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’s degree the student is pursuing.

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

4. Associate Degree Comprehensive Requirement limits are:
   • PCC courses approved to be repeated for credit other than Cooperative Education may only be applied once in meeting a PCC degree or certificate requirement. Students may take a course additional times for credit, if the course is so designated, but those additional credits may not be used toward fulfilling PCC degree or certificate requirements. Certain CTE programs have exceptions to this requirement. Contact programs for information.
   • A maximum of 12 credits of Cooperative Education courses may be applied to the degree. Specific AAS degrees that deviate from this maximum will state the degree maximum up to 24 credits (12 credits per year) in the degree requirements for the specific AAS Degree.
   • A maximum of 9 credits of 199 or 299 experimental courses may be applied to the degree.
   • A maximum of 24 credits of English for Speakers of Other Languages (ESOL) courses may be applied to the degree.
   • A maximum of 24 credits of “P” (Pass) grades will apply to any degree. Specific AAS degrees that deviate from this maximum will state the degree maximum in the degree requirements for the specific AAS degree.
ASSOCIATE OF APPLIED SCIENCE (AAS) DEGREE REQUIREMENTS

The Associate of Applied Science (AAS) degree is awarded to students in career technical programs who meet the requirements listed below. Many career technical programs require more than 90 credits for an associate’s degree.

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

1. Associate Degree Comprehensive Requirements
2. Associate of Applied Science Requirements

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

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
   • Science/Math/Computer Science

   The 16 credits must include at least one course with a minimum of 3 credits from each category. No more than two courses may come from courses required by specific programs. Because of these restrictions, it is possible 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 Associate of Applied Science degree program for specific courses required for General Education.

c. PCC Basic Competency Requirements for Writing and Math in the 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

   Students with AA, AAS, AGS, AS, BA, BS degree or higher from a regionally-accredited United States institution, Program-specific General Education requirements for some AAS degrees will not necessarily be waived. Students should consult the Career/Technical program department for specific courses required for General Education.

   Math: Competency in mathematics or computation must be demonstrated by:
   • Completing with a grade of C or P or better MTH 65 or MTH 63, or
   • Passing the PCC Competency Exam for MTH 65, or
   • Completing with a grade of C or P or better a MTH class with a minimum of 3 credits, for which MTH 65, MTH 63, or higher level math skills are a prerequisite, or
   • Completing with a grade of C or P or better a career-technical computation course of 3 or more credits that aligns with and supports the program goals or intended outcomes, or
   • Completing with a grade of C or P or better all courses that comprise 90 hours of embedded related instruction in computation that aligns with and supports the program goals or intended outcomes

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 (100-level and above) in physical education (PE) may be applied to an AAS degree unless specifically required by the program.

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

ASSOCIATE OF ARTS OREGON TRANSFER (AAOT) DEGREE REQUIREMENTS

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

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

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

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

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

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

   a. Foundational Requirements: Courses must be a minimum of 3 credits (except for Health/Wellness/Fitness courses, which may be any number of credits)
   • Writing*: WR 121 and either WR 122 or WR 227. A student must have at least 8 credits of Writing; WR 123 may be used to complete the 8 credits.
   • Oral Communication: COMM 111 or COMM 112 or SP 113.
   • Math*: Complete a minimum of four credits in MTH 105 or any course for which Intermediate Algebra (MTH 95 at PCC) is a prerequisite.
DEGREE, CERTIFICATE, AND COURSE OVERVIEW

2. Associate of General Studies (AGS) Requirements:
   a. General Education Requirement: Students must earn a minimum of 16 credits of General Education taken from the General Education Disciplines List. These credits must come from courses taken in the following categories:
      - Arts and Letters
      - Social Sciences
      - Science/Math/Computer Science
   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 toward Foundational Requirements or Discipline Studies but not both.
      - Arts and Letters: Complete at least 3 courses chosen from at least two disciplines in this area
      - Social Sciences: Complete at least 4 courses chosen from at least two disciplines in this area
      - 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) may be applied to this degree.

* 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.

Note: Effective July 1, 2014, the Oregon University System is restructuring. At the time of publication, no changes are expected to impact degree and program requirements as outlined in this catalog for 2014-2015.

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 pursue 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:
1. Associate Degree Comprehensive Requirements
2. Associate of General Studies (AGS) Requirements:
   A. General Education Requirement: Students must earn a minimum of 16 credits of General Education taken from the General Education Disciplines List. These credits must come from courses taken in the following categories:
      - Arts and Letters
      - Social Sciences
      - Science/Math/Computer Science
   B. Basic Competency Requirements in writing and math for the 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
      Students with AA, AAS, AGS, AS, BA, BS degrees or higher from a U.S. regionally accredited institution will have the basic competency in writing (WR 121) waived
      Math: Competency in mathematics must be demonstrated by:
      - Completing MTH 65 or MTH 63 with a C or better, or
      - Passing the PCC MTH 65 Competency Exam, or
      - Passing a mathematics course (minimum of 3 credits) for which MTH 65 or higher is a prerequisite with a grade of C or better
   C. Elective Credit Requirements - All students must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective credits may apply from any course numbered 100 or higher (either lower division collegiate or career technical). Elective credit limitations are:
      - Maximum of six credits of one credit MSD workshops may apply
      - Maximum of six credits (100 level and above) of physical education (PE) may apply
      - Maximum of 24 credits of occupational skills classes (OST) may apply

ASSOCIATE OF SCIENCE (AS) DEGREE REQUIREMENTS

The Associate of Science degree is designed for students planning to transfer credits to a baccalaureate degree program at four-year institutions. 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 (AS) degree is awarded to students who meet the following:
1. Associate Degree Comprehensive Requirements.
2. Associate of Science Requirements:
   a. Courses listed below must be completed with a grade of C or better, or a P.
      - Writing: All candidates must complete a minimum of 6 credits in English Composition. The 6 credits must include WR 121, or include other lower division collegiate WR courses that have WR 121 or WR 122 as a prerequisite.
      - Health: Complete HE 250 and one credit of Physical Education (100-level or above) or HE 295 & PE 295
      - Math: Competency in mathematics must be demonstrated by:
         - Completing MTH 65 or MTH 63 with a C or better, or
         - Passing the PCC MTH 65 Competency Exam, or
         - Passing a mathematics course (minimum of 3 credits) for which MTH 65 or higher is a prerequisite with a grade of C or better
   b. Basic Competency Requirements in writing and math for the AS 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
      Students with AA, AAS, AGS, AS, BA, BS degrees or higher from a regionally accredited United States institution will have the basic competency in writing (WR 121) waived
      Math: Competency in mathematics must be demonstrated by:
      - Completing MTH 65 or MTH 63 with a C or better, or
      - Passing the PCC MTH 65 Competency Exam, or
      - Passing a mathematics course (minimum of 3 credits) for which MTH 65 or higher is a prerequisite with a grade of C or better
      - Maximum of six credits of one credit MSD workshops may apply
      - Maximum of six credits (100 level and above) of physical education (PE) may apply
      - Maximum of 24 credits of occupational skills classes (OST) may apply

   C. Elective Credit Requirements - All students must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective credits may apply from any course numbered 100 or higher (either lower division collegiate or career technical). Elective credit limitations are:
      - Maximum of six credits of one credit MSD workshops may apply
      - Maximum of six credits (100 level and above) of physical education (PE) may apply
      - Maximum of 24 credits of occupational skills classes (OST) may apply

   D. Course Distribution Requirements:
      - Minimum of three credits from each category. General Education requirements for the AGS degree will be waived for students who enroll at PCC with an AA, AAS, AGS, AS, BA, BS degree or higher from a regionally accredited United States institution.

   E. Course Distribution Requirements:
      - Minimum of three credits from each category. General Education requirements for the AGS degree will be waived for students who enroll at PCC with an AA, AAS, AGS, AS, BA, BS degree or higher from a regionally accredited United States institution.
DEGREE, CERTIFICATE, AND COURSE OVERVIEW

ASSOCIATE OF SCIENCE OREGON TRANSFER IN BUSINESS (ASOT-BUS)

The Associate of Science Oregon Transfer-Business (ASOT-BUS) 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 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. Some institutions have specific requirements for admission to their Business program. Examples include: a higher minimum GPA requirement, a requirement that specific courses within the ASOT-BUS be taken for a letter grade (meaning that courses taken P/NP will not be accepted), or additional coursework. It is strongly recommended students contact the specific OUS institution Business program early in the first term of their ASOT-BUS course work to be advised of admission requirements.

The ASOT-BUS is awarded to students who meet the following:

1. Associate Degree Comprehensive Requirements
   - Math*: Complete a minimum of 4 credits in MTH 105 or any math course with Intermediate Algebra (MTH 95 at PCC) as a prerequisite
   - Discipline Studies Requirements: Students must earn a minimum of 21 credits taken from the General Education/Discipline Studies List. A minimum of 7 credits must be earned in each of the following distribution areas:
     - Arts and Letters
     - Social Sciences
     - Science/Math/Computer Science
   - 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 may be applied to this degree.

* Basic writing and math competency will be met by these requirements.

Note: Effective July 1, 2014, the Oregon University System is restructuring. At the time of publication, no changes are expected to impact degree and program requirements as outlined in this catalog for 2014-2015.

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 toward Foundation Requirements or Discipline Studies but not both.
   - Arts and Letters: Complete at least 3 courses chosen from at least 2 disciplines in this area
   - Social Sciences: Complete at least 4 courses chosen from at least 2 disciplines in this area. A minimum of 2 courses in Microeconomics and Macroeconomics must be included.
   - Science/Math/Computer Science: Complete at least 4 courses in at least 2 disciplines. At least 3 of these courses must be laboratory courses in the biological or physical sciences. The fourth course can be 1 of the 3 math courses from the Foundational Requirements.
   - Cultural Literacy: Students must select 1 course from any of the Discipline Studies that is designated as meeting the statewide criteria for cultural literacy (as indicated on the General Education/Discipline Studies List). This course can be one of the 11 required Discipline Studies courses.

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

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

UNIVERSITY SPECIFIC PREREQUISITES, RECOMMENDATIONS

Each OUS school has different requirements for its Business program; in some cases, meeting the minimum requirements of the ASOT-BUS degree will not fulfill the eligibility requirements for admission to the school’s Business program. Examples of eligibility requirements include: a higher minimum GPA for admission than is required for the ASOT-BUS, a requirement that specific courses within the ASOT-BUS degree be taken for a letter grade (courses taken P/NP will not be accepted), or additional coursework beyond that included in the ASOT-BUS. Students are advised to contact their OUS destination institution Business program early in the first term of their ASOT-BUS course work to be advised of admission and additional course requirements beyond those stipulated above.

EASTERN OREGON UNIVERSITY
http://www.eou.edu/admissions/transfer/

OREGON INSTITUTE OF TECHNOLOGY
http://oit.edu/programs/manage
DEGREE, CERTIFICATE, AND COURSE OVERVIEW

OREGON STATE UNIVERSITY
http://business.oregonstate.edu/services/archived-transfer

PORTLAND STATE UNIVERSITY
http://pdx.edu/sba/transfer-students

SOUTHERN OREGON UNIVERSITY
http://sou.edu/business/undergrad/index.html

UNIVERSITY OF OREGON
http://lcb.oregon.edu/App_Aspx/advisingResources.aspx

WESTERN OREGON
http://wou.edu/ias/business/major.php

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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 (p. 33) section of the catalog. PCC courses approved to be repeated for credit other than Cooperative Education may only be applied once in meeting a PCC degree or certificate requirement. Students may take a course additional times for credit, if the course is so designated, but those additional credits may not be used toward fulfilling PCC certificate requirements. Certain CTE programs have exceptions to this requirement. Contact programs for information. Credit courses, numbered below 100 cannot be used to fulfill the credit minimum requirements for certificates.

Please note the following requirements:

TWO-YEAR CERTIFICATE REQUIREMENTS

1. At least 24 credits must be earned at PCC, 18 of which must apply to the certificate requirements. The final 9 credits that apply to the certificate must be earned at PCC; students may apply to the department chair for waiver of this requirement if they can demonstrate currency in the field.
2. A maximum of 24 credits of “P” (Pass) grades will apply to any two-year certificate. Specific two-year certificates that deviate from this maximum will state their Pass/No Pass maximum in the requirements for the specific two-year certificate.
3. A maximum of 12 credits of Cooperative Education courses may be applied to any one-year certificate.
4. Only 9 credits of 199 and 299 experimental courses apply.

ONE-YEAR CERTIFICATE REQUIREMENTS

1. At least 12 credits must be earned at PCC, 9 of which must apply to the certificate requirements. The final 9 credits that apply to the certificate must be earned at PCC; students may apply to the department chair for waiver of this requirement if they can demonstrate currency in the field.
2. A maximum of 12 credits of “P” (Pass) grades will apply to any one-year certificate. Specific one-year certificates that deviate from this maximum will state their Pass/No Pass maximum in the requirements for the specific one-year certificate.
3. A maximum of 12 credits of Cooperative Education courses may be applied to any one-year certificate.
4. Only 9 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 6 credits that apply to the certificate must be earned at PCC; students may apply to the department chair for waiver of this requirement if they can demonstrate currency in the field.
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 9 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(s) 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 (p. 33) section of the catalog under individual career technical programs. Based upon credits, Career Pathway Certificates may need to satisfy the same requirements as Less Than One-Year Certificates.

EMPLOYMENT SKILLS TRAINING

Some career technical departments offer the Employment Skills Training Certificate (EST). The EST is an individualized certificate ranging from 12-44 credits that prepares the student for a specific job. Students should contact the appropriate career technical department to find out whether the department offers the EST. A full description of the EST may be found in the Programs and Disciplines (p. 33) section of this catalog.

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 MTH 60
DEGREE, CERTIFICATE, AND COURSE OVERVIEW

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

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

THREE TO FOUR CREDIT CONVERSION

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

EXPERIMENTAL COURSES

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

NON-CREDIT COURSES

PCC offers a large number and variety of non-credit courses for personal and career advancement as well as continuing education for professionals in several areas. See www.pcc.edu/communityed 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 (p. 33) section of the catalog.

GAINFUL EMPLOYMENT

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

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.

Note: Effective July 1, 2014, the Oregon University System is restructuring. At the time of publication, no changes are expected to impact degree and program requirements as outlined in this catalog for 2014-2015.
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Candidates for all PCC degrees are required to complete credits from General Education/Discipline Studies. PCC courses which meet the requirement are detailed in the table of General Education/Discipline Studies. Students are responsible for consulting the institution to which they will transfer to determine how the credits will be accepted.

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

PCC GENERAL EDUCATION/DISCIPLINE STUDIES PHILOSOPHY

THE PHILOSOPHY STATEMENT

The faculty of Portland Community College affirms that a prime mission of the College is to aid in the development of educated citizens. Ideally, such citizens possess:

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

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

GENERAL EDUCATION/DISCIPLINE STUDIES

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<td>SOC 228</td>
<td>Introduction to Environmental Sociology</td>
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<td>Introduction to Gerontology</td>
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<td>Sociology of Health Aging</td>
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Support Courses (p. 33)  
Career Technical Courses (p. 33)  
Lower Division Collegiate Courses (p. 33)

**SUPPORT COURSES**

- ALC: Alternative Learning Center
- DE: Developmental Education
- ESOL: English for Speakers of Other Languages

**CAREER TECHNICAL COURSES**

- AB: Auto Collision Repair Technology
- AD: Alcohol and Drug Counselor
- AM: Automotive Service Technology
- AMT: Aviation Maintenance Technology
- APR: Apprenticeship
- ARCH: Architectural Design and Drafting
- AVS: Aviation Science
- BA: Business Administration (BA 255 only)
- BCT: Building Construction Technology
- BIT: Bioscience Technology
- BMZA: Biology and Management of Zoo Animals
- CADD: Computer Added Design and Drafting
- CAS: Computer Applications
- CIS: Computer Information Systems
- CJA: Criminal Justice
- CMET: Civil and Mechanical Engineering Technology
- CTT: Computed Tomography
- DA: Dental Assisting
- D: Dental Hygiene
- DS: Diesel Service Technology
- DST: Dealer Service Technology
- DT: Dental Laboratory Technology
- ECE: Early Education and Family Studies
- ED: Education
- EET: Electronic Engineering Technology
- ELT: Electrical Trades
- EM: Emergency Management
- EMS: Emergency Medical Services
- ETC: Emergency TeleCommunicator/911 Dispatcher
- FMT: Facilities Maintenance Technology
- FN: Foods and Nutrition
- FP: Fire Protection Technology
- FT: Fitness Technology
- GD: Graphic Design
- GRN: Gerontology
- HEC: Consumer and Family Studies
- HIM: Health Information Management
- HR: Culinary Assistant
- ID: Interior Design
- INSP: Building Inspection Technology
- ITP: Sign Language Interpretation
- LAT: Landscape Technology
- LEC: Lactation Education
- MA: Medical Assisting
- MCH: Machine Manufacturing Technology
- MLT: Medical Laboratory Technology
- MM: Multimedia
- MP: Medical Professions
- MRI: Magnetic Resonance Imaging
- MSD: Management and Supervisory Development
- MT: Microelectronic Technology
- MUC: Professional Music
- NRS: Nursing
- OMT: Ophthalmic Medical Technology
- OS: Office Systems
- OST: Occupational Skills Training
- PL: Paralegal

RAD: Radiography
RE: Real Estate
VT: Veterinary Technology
WLD: Welding Technology

* Many career and technical courses are applicable to the baccalaureate degree. Check with the BA-granting institution.

**LOWER DIVISION COLLEGIATE COURSES**

(only course numbers 100-299 are LDC at PCC)

- ART: Art
- ASL: American Sign Language
- ATH: Anthropology
- BA: Business Administration ** (except 255)
- Bi: Biology**
- CG: College Success and Career Guidance **
- CH: Chemistry
- CHLA: Chicano/Latino Studies
- CHN: Chinese
- CIS: Computer Information Systems (only 120, 121, 122)
- CJA: Criminal Justice (except 115, 117, 199A, 230, 244-247, 299B-D)
- COMM: Communication Studies
- CS: Computer Science
- CSS: Crop Soil Science
- D: Dance
- EC: Economics
- ENG: English
- ENGR: Engineering
- ESOL: English for Speakers of Other Languages **
- ESR: Environmental Studies
- F: Fashion Design
- FN: Foods and Nutrition (only 225)
- FR: French
- G: Geology
- GEO: Geography
- GER: German
- GS: General Science
- HE: Health Studies
- HEC: Consumer and Family Studies (only 226, 280A)
- HON: Honors
- HOR: Horticulture
- HPE: Health and Physical Education
- HST: History
- HUM: Humanities
- ITAL: Italian
- J: Journalism
- JPN: Japanese
- LIB: Library
- MTH: Mathematics **
- MUP: Applied Music
- MUS: Music
- PE: Physical Education
- PHL: Philosophy
- PHY: Physics
- PS: Political Science
- PSY: Psychology
- R: Religion
- RD: Reading**
- RUS: Russian
- SOC: Sociology
- SPA: Spanish
- TA: Theatre Arts
- WR: Writing **
- WS: Women’s Studies

** A number below 100 indicates a support course and a number above 9000 indicates a vocational supplementary course. These courses are not usually transferable. PCC is committed to offering instruction providing students with the opportunity for self-improvement, entry level employment skills and to complete the first two years of a baccalaureate degree.
ALCOHOL AND DRUG COUNSELOR

Cascade Campus
Technology and Education Building (TEB), Room 103
971-722-5667 - Program Admissions Specialist, prior to being accepted to the program
971-722-5427 - Program Advisor, once accepted into the program.
Program information and application materials can be found at:
http://www.pcc.edu/alcohol-counseling/

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.

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.

Recovery status from nicotine addiction is not required but it is highly recommended. Active nicotine addiction can be a barrier to employment and is an ethical issue to be considered for the addiction counseling specialist.

Program courses are usually offered in afternoons or evenings but attendance for some Saturday courses are required. 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.

Four-year institutions may accept 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.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Alcohol and Drug Counselor

LESS THAN ONE-YEAR CERTIFICATE
Addiction Studies

PREREQUISITES AND REQUIREMENTS
- Completion of AD 101, with a C or better.
- Completion of WR 121, with a C or better.
- Completion of LIB 101, with a C or better.
- Documentation of not abusing alcohol or drugs for 18 months prior to admission.
- Complete the A&D Counselor Program application.
- After a complete application is approved, the student should schedule an advising session with a program adviser.

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

Prior to being accepted into either the degree or certificate programs, students may enroll in AD 102, AD 103, AD 104, AD 106, AD 184, WR 121, WR 122, PSY 201A or PSY 202A, PSY 239, MP 150 in any course from the Alcohol and Drug Counselor elective list: in any General Education course and in any course needed to meet the Math Competency requirement.

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

ALCOHOL AND DRUG COUNSELOR AAS DEGREE
Minimum 99 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

ALCOHOL AND DRUG COUNSELOR DEGREE CREDIT SUMMARY

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Total Credits 99

ALCOHOL AND DRUG DEGREE COURSES

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PSY 201A or PSY 202A: Introduction to Psychology - Part 1 or Part 2
PSY 239: Introduction to Abnormal Psychology
WR 122: English Composition
Alcohol and Drug Counselor Degree Electives
PSY 201A and PSY 202A could be used as General Education. Only two from this list may be used.

TOTAL CREDITS: 99

* Students attend a concurrent two-credit seminar each term. Students who complete practicum in three terms only need six credits of AD 270B.

ALCOHOL AND DRUG COUNSELOR DEGREE ELECTIVES
AD 105: Aging & Addiction
AD 107: Addiction Recovery Mentor
AD 108: Adolescence and Addiction
AD 109: Criminality and Addiction
AD 110: Substance Abuse Prevention
AD 111: Gambling and Addiction I
AD 112: Gambling and Addiction II

ADDITIONAL STUDIES LESS THAN ONE-YEAR CERTIFICATE
Minimum 44 credits. The Addiction Studies Certificate is a related certificate. All courses are contained in the Alcohol and Drug Counselor AAS Degree.

ADDITIONAL STUDIES CERTIFICATE COURSES
AD 102: Drug Use and Addiction
AD 104: Multicultural Counseling
AD 106: Smoking Cessation
AD 150: Basic Counseling and Addiction
AD 151: Basic Counseling Skills Mastery
AD 152: Group Counseling and Addiction
AD 153: Theories of Counseling
AD 154: Client Record Management and Addiction
AD 155: Motivational Interviewing & Addiction
AD 156: Ethical and Professional Issues
AD 157: Motivational Interviewing Skills Mastery
AD 255: Multiple Diagnoses
AD 270A: Practicum: Addiction
AD 270B: Practicum: Addiction - Seminar
AD 278: Practicum Preparation

TOTAL CREDITS: 44

* Students attend a concurrent two-credit seminar each term.

AMERICAN SIGN LANGUAGE
See Sign Language Studies (p. 157)

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

Rock Creek Campus
Building 3, Room 201

971-722-7327
Sylvania Campus
Social Science (SS), Room 217
971-722-4289

DESCRIPTION
Anthropology is the study of people. In this discipline, people are considered in all their biological and cultural diversities, in the present as well as in the prehistoric past and wherever people have existed. Students are introduced to the interaction between people and their environments to develop an appreciation of human adaptations past and present. Anthropology can be a synthesizing focus for data from many fields of inquiry and has integral importance in preparing students to survive and play positive roles in our emergent transcultural world. Students can pursue careers in teaching, research and other fields after completing graduate work.

At PCC, the general anthropology and cultural anthropology sequences are offered yearly. All other courses may be offered less frequently. The department suggests, but does not require that students take cultural anthropology and field archaeology in sequential order.

APPRENTICESHIP
Swan Island Trades Center
Room 109
6400 North Cutter Circle, Portland OR, 97217
971-722-5651 or 971-722-5650
www.pcc.edu/apr

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

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

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

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Electrician Apprenticeship Technologies
Construction Trades, General Apprenticeship
Industrial Mechanics and Maintenance Technology Apprenticeship

CERTIFICATE OF COMPLETION
Limited Electrician Apprenticeship Technologies
Electrician Apprenticeship Technologies
Manual Trades Apprenticeship
Construction Trades, General Apprenticeship
Mechanical Maintenance Apprenticeship
Industrial Mechanics and Maintenance Technology Apprenticeship

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

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

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

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

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

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

CONSTRUCTION TRADES, GENERAL APPRENTICESHIP PATHWAY
Construction Trades, General Apprenticeship AAS Degree (p. 36)
Construction Trades, General Apprenticeship Certificate (p. 36)
Manual Trades Apprenticeship Certificate (p. 36)

CONSTRUCTION TRADES, GENERAL APPRENTICESHIP AAS DEGREE
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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

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

CONSTRUCTION TRADES, GENERAL APPRENTICESHIP CERTIFICATE
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.

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
Related Instruction 9
Credit for Prior Certification 0
Approved Program Electives 0
Total Credits 25-108

MANUAL TRADES APPRENTICESHIP CERTIFICATE
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.

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
Related Instruction 0
Credit for Prior Certification 0
Approved Program Electives 0
Total Credits 16-44

RELATED INSTRUCTION
For related instruction in a certificate students should 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 4

Communication
WR 115 Introduction to Expository Writing 4
WR 121 English Composition 4
COMM 100 Introduction to Communication 4

Human Relations
PSY 101 Psychology and Human Relations 4
SOC 204 Sociology in Everyday Life 4
PSY 216 Social Psychology 4

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES PATHWAY
Electrician Apprenticeship Technologies AAS Degree (p. 36)
Limit Electrician Apprenticeship Technologies Certificate (p. 37)

ELECTRICIAN APPRENTICESHIP TECHNOLOGIES AAS DEGREE
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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

4000-8000 Hour BOLI-ATD Trades
College credit courses for Related-Training 16-75
**PROGRAMS & DISCIPLINES**

**ELECTRICIAN APPRENTICESHIP TECHNOLOGIES CERTIFICATE**

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. 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

<table>
<thead>
<tr>
<th>6000-8000 Hour BOLI-ATD Trades</th>
<th>College credit courses for Related-Training</th>
<th>16-99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Instruction 1</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Credit for Prior Certification</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Approved Program Electives</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>25-108</td>
<td></td>
</tr>
</tbody>
</table>

1 See related instruction list below for approved courses

**LIMITED ELECTRICIAN APPRENTICESHIP TECHNOLOGIES CERTIFICATE**

This certificate requires a minimum of 16 credits of related classroom training. 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.


<table>
<thead>
<tr>
<th>4000 Hour BOLI-ATD Trades</th>
<th>College credit courses for Related-Training</th>
<th>16-44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Instruction</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Credit for Prior Certification</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Approved Program Electives</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>16-44</td>
<td></td>
</tr>
</tbody>
</table>

**RELATED INSTRUCTION 1**

For related instruction in a certificate students should 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 4
- **Communication**
  - WR 115 Introduction to Expository Writing 4
  - WR 121 English Composition 4
- **Human Relations**
  - PSY 101 Psychology and Human Relations 4
  - SOC 204 Sociology in Everyday Life 4
  - PSY 216 Social Psychology 4

**INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP PATHWAY**


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

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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

4000-8000 Hour BOLI-ATD Trades

<table>
<thead>
<tr>
<th>College credit courses for Related-Training</th>
<th>16-75</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>Credit for Prior Certification</td>
<td>0</td>
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<tr>
<td>Approved Program Electives</td>
<td>0-41</td>
</tr>
<tr>
<td>Total Credits</td>
<td>90-108</td>
</tr>
</tbody>
</table>

**INDUSTRIAL MECHANICS AND MAINTENANCE TECHNOLOGY APPRENTICESHIP CERTIFICATE**

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.


6000-8000 Hour BOLI-ATD Trades

<table>
<thead>
<tr>
<th>College credit courses for Related-Training</th>
<th>16-99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Instruction 1</td>
<td>9</td>
</tr>
<tr>
<td>Credit for Prior Certification</td>
<td>0</td>
</tr>
<tr>
<td>Approved Program Electives</td>
<td>0</td>
</tr>
<tr>
<td>Total Credits</td>
<td>25-108</td>
</tr>
</tbody>
</table>

1 See related instruction list below for approved courses

**MECHANICAL MAINTENANCE APPRENTICESHIP CERTIFICATE**

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.

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

<table>
<thead>
<tr>
<th>College credit courses for Related-Training</th>
<th>16-44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related Instruction</td>
<td>0</td>
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<tr>
<td>Credit for Prior Certification</td>
<td>0</td>
</tr>
<tr>
<td>Approved Program Electives</td>
<td>0</td>
</tr>
<tr>
<td>Total Credits</td>
<td>16-44</td>
</tr>
</tbody>
</table>
RELATED INSTRUCTION 1
For related instruction in a certificate students should 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 4

Communication
WR 115 Introduction to Expository Writing 4
WR 121 English Composition 4

Human Relations
PSY 101 Psychology and Human Relations 4
SOC 204 Sociology in Everyday Life 4
PSY 216 Social Psychology 4

ARCHITECTURAL DESIGN AND DRAFTING (ARCH)
Sylvania Campus
Science Technology Building (ST), Room 200
971-722-4163
www.pcc.edu/arch

CAREER AND PROGRAM DESCRIPTION
This two-year Associate of Applied Science degree program helps students develop the design and technical skills needed in the residential and commercial building design industry.

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

Students should attend a program group advising session prior to enrollment. See department web page at www.pcc.edu/arch for additional information and a list of group advising session dates.

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 new to the program must take the college’s placement exams for math, reading and writing prior to program advising and registration. 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.

ASSOCIATE OF APPLIED SCIENCE DEGREE
Architectural Design and Drafting (p. 38)
Architectural Design and Drafting-Residential Option (p. 39)

ARCHITECTURAL DESIGN AND DRAFTING AAS DEGREE
Minimum 99 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

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

First Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>3</td>
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<tr>
<td>ARCH 126</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 127</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>2</td>
</tr>
</tbody>
</table>

Second Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 101</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 136</td>
<td>3</td>
</tr>
<tr>
<td>ART 215</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 111</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 162</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 237</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 256</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>ARCH 112</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 113</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 122</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 133</td>
<td>2</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Term</td>
<td>Courses</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Fifth Term</td>
<td>ARCH 123 Structural Systems 3</td>
</tr>
<tr>
<td></td>
<td>ARCH 201 Residential Studio</td>
</tr>
<tr>
<td></td>
<td>ARCH Degree Electives</td>
</tr>
<tr>
<td>Sixth Term</td>
<td>ARCH 202 Commercial Studio</td>
</tr>
<tr>
<td></td>
<td>ARCH 224 Active and Passive Building Systems</td>
</tr>
<tr>
<td></td>
<td>ARCH Degree Electives</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
</tr>
<tr>
<td>Seventh Term</td>
<td>ARCH 203 Residential Renovation Studio</td>
</tr>
<tr>
<td></td>
<td>ARCH 280 Cooperative Education:Architectural Design and Drafting</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
</tr>
</tbody>
</table>

**Total Credits: 99**

**ARCHITECTURAL DEGREE ELECTIVES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ARCH 100 Graphic Communication for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 131 Sustainable Building Strategies</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 134 Energy Conservation Code</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 200 Principles of Architectural Design</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 204 Green Residential Studio</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 247 Intermediate Revit Architecture</td>
<td>3</td>
</tr>
<tr>
<td>BCT 108 Introduction to Building Science - Energy Efficient Housing</td>
<td>3</td>
</tr>
<tr>
<td>BCT 115 Introduction to Residential Greenroofing</td>
<td>1</td>
</tr>
<tr>
<td>BCT 116 Alternative Building Design</td>
<td>3</td>
</tr>
<tr>
<td>ID 121 Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 131 Introduction to Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 133 Space Planning</td>
<td>3</td>
</tr>
<tr>
<td>ID 135 Professional Practices for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID 138 Introduction to Kitchen and Bath Planning</td>
<td>3</td>
</tr>
<tr>
<td>ID 236 Lighting Design</td>
<td>3</td>
</tr>
<tr>
<td>ID 238 Advanced Kitchen and Bath Planning</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits: 99**

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

Minimum 99 credit. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**ARCHITECTURAL DESIGN AND DRAFTING - RESIDENTIAL DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH</td>
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<tr>
<td>ART</td>
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<tr>
<td>ID</td>
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<td>12</td>
</tr>
<tr>
<td></td>
<td>Residential Electives</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credits</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.

<table>
<thead>
<tr>
<th>First Term</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>Graphic Communication for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 126</td>
<td>Introduction to AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>Residential PrintCAD</td>
<td>2</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td>ARCH 124 Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ARCH 132 Residential Building Codes</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ARCH 136 Intermediate AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ART 215 History of American Residential Architecture</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ID 133 Space Planning</td>
<td>3</td>
</tr>
<tr>
<td><strong>Third Term</strong></td>
<td>ARCH 101 Introduction to Residential Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ARCH 121 Structural Systems I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ARCH 256 Detail Drawing with AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ID 138 Introduction to Kitchen and Bath Planning</td>
<td>3</td>
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</tbody>
</table>

**Residential Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 111 Intro to Residential Construction Documents</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 113 Site Planning</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 122 Structural Systems 2</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 224 Active and Passive Building Systems</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td><strong>Fourth Term</strong></td>
<td>ARCH 201 Residential Studio</td>
</tr>
<tr>
<td></td>
<td>ID 236 Lighting Design</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
</tr>
<tr>
<td><strong>Sixth Term</strong></td>
<td>ARCH 200 Principles of Architectural Design</td>
</tr>
<tr>
<td></td>
<td>ARCH 127 Introduction to Google SketchUp</td>
</tr>
<tr>
<td></td>
<td>or ARCH 237 Introduction to Revit Architecture</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
</tr>
<tr>
<td><strong>Seventh Term</strong></td>
<td>ARCH 203 Residential Renovation Studio</td>
</tr>
<tr>
<td></td>
<td>ARCH 280 Cooperative Education:Architectural Design and Drafting</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
</tr>
<tr>
<td><strong>Total Credits</strong>: 99</td>
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</tbody>
</table>

**RESIDENTIAL ELECTIVES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 127 Introduction to Google SketchUp</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 131 Sustainable Building Strategies</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 134 Energy Conservation Code</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 202 Commercial Studio</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 204 Green Residential Studio</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 237 Introduction to Revit Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 247 Intermediate Revit Architecture</td>
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</tr>
<tr>
<td>BCT 108 Introduction to Building Science - Energy Efficient Housing</td>
<td>3</td>
</tr>
<tr>
<td>BCT 115 Introduction to Residential Greenroofing</td>
<td>1</td>
</tr>
<tr>
<td>BCT 116 Alternative Building Design</td>
<td>3</td>
</tr>
<tr>
<td>BCT 244 Kitchen and Bath Cabinet Installation</td>
<td>2</td>
</tr>
<tr>
<td>ID 121 Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 132 Planning Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 135 Professional Practices for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID 225 CAD for Kitchen and Bath Design</td>
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</tr>
<tr>
<td>ID 238 Advanced Kitchen and Bath Planning</td>
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</tbody>
</table>
ONE-YEAR CERTIFICATE
Kitchen and Bath (p. 40)

LESS THAN ONE-YEAR CERTIFICATE
Sustainable Design (p. 40)

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

KITCHEN AND BATH CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<tr>
<td>BCT</td>
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</tr>
<tr>
<td>ID</td>
<td>34</td>
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<td>Total Credits</td>
<td>51</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
- 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

Third Term
- BCT 244: Kitchen and Bath Cabinet Installation 2
- ID 135: Professional Practices for Designers 3
- ID 236: Lighting Design 3
- ID 238: Advanced Kitchen and Bath Planning 3

Fourth Term
- ARCH 121: Structural Systems I 2
- ARCH 132: Residential Building Codes 2
- ART 215: History of American Residential Architecture 3
- ID 280A: Cooperative Education: Kitchen and Bath 6

Total Credits: 50

DESIGN AND BUILDING ELECTIVES
- ARCH 256: Detail Drawing with AutoCAD 3
- BCT 108: Introduction to Building Science - Energy Efficient Housing 3
- BCT 115: Introduction to Residential Greenroofing 1
- BCT 116: Alternative Building Design 3
- ID 236: Lighting Design 3
- LAT 272: Sustainable Landscaping 3

GENERAL ENVIRONMENTAL ELECTIVES
- BI 200B: Principles of Ecology: Field Biology 4
- ESR 171: Environmental Science: Biological Perspectives 4
- ESR 172: Environmental Science: Chemical Perspectives 4
- GEO 210: The Natural Environment 4
- PHL 206: Introduction to Environmental Ethics 4
- SOC 228: Introduction to Environmental Sociology 4

SUSTAINABLE DESIGN LESS THAN ONE-YEAR CERTIFICATE
Minimum 43 credits. Students must meet certificate requirements.

SUSTAINABLE DESIGN CERTIFICATE CREDIT SUMMARY

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<tr>
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<td>43</td>
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ART
Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 105
971-722-5430

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

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

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

www.pcc.edu/programs/art/

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

PCC’s Art program provides a rigorous and rewarding arts education to students moving in to upper-division courses for a baccalaureate degree. Many art classes satisfy requirements for the Associate of Arts Oregon Transfer degree.

AUTO COLLISION REPAIR TECHNOLOGY

Rock Creek Campus
Building 2, Room 131 - Shop
Building 2, Room 230 - Office
971-722-7331 or 971-722-7486
www.pcc.edu/ab

CAREER AND PROGRAM DESCRIPTION
Collision repair technicians possess the skills as outlined and recommended by I-CAR (Inter-Industry Conference on Auto Collision Repair) to return a collision damaged vehicle to its pre-accident condition. Among these skills are metal working, welding, mechanical, electrical, air conditioning, plastic repair, shaping and forming fillers, structural analysis and repair, and four wheel suspension alignment.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Auto Collision Repair Technology

TWO-YEAR CERTIFICATE
Auto Collision Repair Technology

LESS THAN ONE-YEAR CERTIFICATE
Auto Body Painting
Auto Collision Repair Technology

PREREQUISITES AND REQUIREMENTS
None currently.

AUTO COLLISION REPAIR TECHNOLOGY AAS DEGREE
Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

AUTO COLLISION REPAIR TECHNOLOGY AAS DEGREE CREDIT SUMMARY

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

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<th>Credits</th>
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<td>AB 201§</td>
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<table>
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<table>
<thead>
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<th>Credits</th>
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<tbody>
<tr>
<td>AB 280A</td>
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</table>

§ Course cannot be substituted with another course.
AB 280B  Cooperative Education: Auto Body Repair - Seminar  2

Total Credits:  72

AUTO BODY PAINTING LESS THAN ONE-YEAR CERTIFICATE
Minimum 36 credits. Students must meet certificate requirements.

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

First Term  Credits
AB 116  Auto Painting I  12

Second Term  AB 117  Auto Painting II  12

Third Term  AB 118  Auto Painting III  12

Total Credits:  36

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

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

First Term  Credits
AB 100  Auto Body Basic Skills  12

Second Term  AB 105  Frame Analysis & Repair  12

Third Term  AB 106  Panel Repair  12

Total Credits:  36

AUTOMOTIVE SERVICE TECHNOLOGY
Sylvania Campus
Automotive Metals Building (AM), Room 210
971-722-4130

www.pcc.edu/ast

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

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

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

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

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, ESOL 262, and ESOL 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. Students must complete each AM course with a P or C or higher in order to earn the Degree or Certificate.

The Automotive Service Technology Program accepts new students three times a year. New students must contact the PCC Automotive Department for advising and registration.

ASSOCIATE OF APPLIED SCIENCE DEGREE
Automotive Service Technology (p. 42)

AUTOMOTIVE SERVICE TECHNOLOGY AAS DEGREE
Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

AUTOMOTIVE SERVICE TECHNOLOGY DEGREE CREDIT SUMMARY

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>CG</td>
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<td>Total Credits</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  Credits
AM 100  Intro to Automotive Systems  4
AM 111  Engine Repair  4
AM 161  Electrical Systems I  4
CG 209\(^1\)  Job Finding Skills  1
General Education  4

Second Term
AM 151  Undercar Systems I  4
AM 141  Undercar Systems II  4
AM 142  Undercar Systems III  4
General Education  4

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

Fourth Term  
AM 181    Engine Performance I  4
AM 182    Engine Performance II  4
AM 183    Engine Performance III  4
General Education  4

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

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

Seventh Term  
AM 280A    Cooperative Education: Automotive Service  8

Total Credits:  81

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

AVIATION MAINTENANCE TECHNOLOGY

Rock Creek Campus
Building 2, Room 230
971-722-7256 or 971-722-7233
www.pcc.edu/amt

CAREER AND PROGRAM DESCRIPTION

An aircraft mechanic certificated 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 certificated 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 certificated 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.

The Aviation Maintenance Technology Program is approved by the State Division of Vocational Education, the Veterans Administration and the Federal Aviation Administration and is offered in a recommended sequence of 24 courses, most of which are 18-day modules. However, flexibility in program design does allow some variation in sequence. Any variation must be approved by the department representative.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Aviation Maintenance Technology

TWO-YEAR CERTIFICATE
Aviation Maintenance Technology

ONE-YEAR CERTIFICATE
Aviation Maintenance Technology: Airframe
Aviation Maintenance Technology: Powerplant

PREREQUISITES AND REQUIREMENTS

Prerequisite for all AMT Certificates and AAS degree:
- Completion of AMT 101, Introduction to AMT
- Placement into RD 90 or higher
- Placement into WR 90 or higher
• Completion of MTH 60 at PCC or if a student places into a higher than a math 60 class at PCC, they must take the (free) AMT department math test. AMT Department Chair permission is required to take the AMT department math test.

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

• General Subject Areas: These courses, contain requirements which are common to both airframe and powerplant ratings. AMT 102, AMT 105, AMT 106, AMT 107, AMT 108, AMT 203 and AMT 204 are required prior to entry into the airframe and powerplant subject areas.

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

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

AVIATION MAINTENANCE TECHNOLOGY AAS DEGREE

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

AVIATION MAINTENANCE TECHNOLOGY DEGREE CREDIT SUMMARY

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COURSE OF STUDY

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

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<td>AMT 106§</td>
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<td>AMT 107§</td>
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Second Term

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Third Term

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<td>AMT 208§</td>
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Fifth Term

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<td>AMT 117</td>
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Seventh Term

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Eighth Term

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<td>AMT 225§</td>
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Total Credits: 108

§ Course cannot be substituted for another course.

TWO-YEAR CERTIFICATE

Aviation Maintenance Technology (p. 44)

ONE-YEAR CERTIFICATE

Aviation Maintenance Technology: Airframe (p. 45)
Aviation Maintenance Technology: Powerplant (p. 45)

AVIATION MAINTENANCE TECHNOLOGY TWO-YEAR CERTIFICATE

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

AVIATION MAINTENANCE TECHNOLOGY CERTIFICATE CREDIT SUMMARY

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<th>Credits</th>
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COURSE OF STUDY

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

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<td>AMT 107§</td>
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Second Term

<table>
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<td>AMT 102§</td>
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Third Term

<table>
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### PROGRAMS & DISCIPLINES

**PORTLAND COMMUNITY COLLEGE**

**2014-2015**

<table>
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<th>Term</th>
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<th>Course Title</th>
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<tr>
<td>Fourth Term</td>
<td>AMT 211</td>
<td>Composite Structures</td>
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<tr>
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<td>AMT 212</td>
<td>Sheet Metal</td>
<td>4</td>
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<tr>
<td></td>
<td>AMT 213</td>
<td>Hydraulics, Pneumatics and Landing Gear</td>
<td>4</td>
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<tr>
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<td>WLD 210</td>
<td>Aviation Welding</td>
<td>2</td>
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<tr>
<td>Fifth Term</td>
<td>AMT 115</td>
<td>Aircraft Structures &amp; Inspection</td>
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<tr>
<td></td>
<td>AMT 117</td>
<td>Reciprocating Engine Theory &amp; Maintenance</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 214</td>
<td>Instruments, Communication &amp; Navigation Systems</td>
<td>4</td>
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<tr>
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<td>AMT 216</td>
<td>AMT Practicum/Airframe</td>
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<tr>
<td>Sixth Term</td>
<td>AMT 115</td>
<td>Aircraft Structures &amp; Inspection</td>
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<td></td>
<td>AMT 214</td>
<td>Instruments, Communication &amp; Navigation Systems</td>
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<td>AMT 216</td>
<td>AMT Practicum/Airframe</td>
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<td>Seventh Term</td>
<td>AMT 121</td>
<td>Turbine Engine Theory and Maintenance</td>
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<td>AMT 218</td>
<td>Powerplant Inspection</td>
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<td>AMT 222</td>
<td>Reciprocating Engine Overhaul</td>
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<td>AMT Practicum/ Powerplant</td>
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</tbody>
</table>

**Total Credits:** 92

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

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

**AIRFRAME CERTIFICATE 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.

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<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
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<td>AMT 107</td>
<td>Materials &amp; Processes</td>
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<td>AMT 102</td>
<td>Aircraft Electricity I</td>
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<td>AMT 120</td>
<td>Propellers and Engine Installation</td>
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<tr>
<td></td>
<td>AMT 219</td>
<td>Turbine Engine Overhaul</td>
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**Total Credits:** 92

### COURSE OF STUDY

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<td>Fourth Term</td>
<td>AMT 218</td>
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<td>AMT 222</td>
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<td>AMT 225</td>
<td>AMT Practicum/ Powerplant</td>
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</tbody>
</table>

**Total Credits:** 92

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

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

**POWERPLANT CERTIFICATE CREDIT SUMMARY**

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**Total Credits:** 92

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</tbody>
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**Total Credits:** 92

### AVIATION SCIENCE

**Rock Creek Campus**

Building 2, Room 230
971-722-7256 or 971-722-7457

**Southeast Campus**

Student Commons (SCOM), Room 214
971-722-6176

www.pcc.edu/fly

### CAREER AND PROGRAM DESCRIPTION

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

**DEGREES AND CERTIFICATES OFFERED**

**ASSOCIATE OF APPLIED SCIENCE DEGREE**
- Aviation Science Airplane without Flight Instructor
- Aviation Science Airplane with Flight Instructor
- Aviation Science Helicopter (also includes Flight Instructor)

**PREREQUISITES AND REQUIREMENTS**

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

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

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

Additionally, the FAA requires a Class II Medical Certificate prior to beginning flight training. See www.pcc.edu/fly and click "Getting Started" for details.

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

- Aviation Science Airplane - Flight Instructor (p. 46)
- Aviation Science Airplane - Without Flight Instructor (p. 46)
- Aviation Science Helicopter (p. 47)

**AVIATION SCIENCE - AIRPLANE WITH FLIGHT INSTRUCTOR 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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**AVIATION SCIENCE - AIRPLANE DEGREE CREDIT SUMMARY**

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<th>Course Title</th>
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<tr>
<td>AVS 125</td>
<td>Airplane: Private Pilot Flight</td>
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<td>AVS 127</td>
<td>Introduction to Aviation</td>
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<td>AVS 135</td>
<td>Airplane: Instrument Flight</td>
<td>4</td>
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<td>AVS 137</td>
<td>Applied Aerodynamics</td>
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<tr>
<td>AVS 145</td>
<td>Introduction to Commercial Airplane</td>
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<td>AVS 157</td>
<td>Aircraft Systems &amp; Structures I: Airframe</td>
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<td>AVS 167</td>
<td>Aircraft Systems: Powerplant</td>
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<tr>
<td>AVS 177</td>
<td>Pilot Human Factors and Safety Management</td>
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<td>AVS 207</td>
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<td>AVS 217</td>
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<td>AVS 227</td>
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<td>AVS 236</td>
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<td>Aviation Law and Regulations</td>
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<td>Airplane Single-Engine CFI Ground/Flight</td>
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<td>AVS 244</td>
<td>Airplane CFII Ground/Flight</td>
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<td>AVS 255</td>
<td>Airplane: Pilot Performance</td>
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<td>AVS 267</td>
<td>Economics of Flight Operations</td>
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<td>GS 109</td>
<td>Physical Science (Meteorology)</td>
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* Could be used as General Education

**AVIATION SCIENCE - AIRPLANE WITHOUT FLIGHT INSTRUCTOR 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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**AVIATION SCIENCE - AIRPLANE DEGREE CREDIT SUMMARY**

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### COURSE OF STUDY: WITHOUT FLIGHT INSTRUCTOR OPTION

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<td>AVS 125</td>
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### AVIATION SCIENCE PROGRAM ELECTIVES

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### COURSE OF STUDY: WITH FLIGHT INSTRUCTOR OPTION

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<td>Aviation Science Program Electives</td>
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<td>Total Credits</td>
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</table>
**PROGRAMS & DISCIPLINES**

**BIOLOGY AND MANAGEMENT OF ZOO ANIMALS**

The Zoo Animal Management professional is knowledgeable and skilled in providing high quality daily care of captive populations of exotic animals, managing sustainable populations, maintaining animal enclosures and exhibits, providing effective interpretive programming to visitors, and participating in conservation programs. Graduates are prepared to serve the zoological community in a variety of capacities including zookeeper or aquarist, animal trainer, zoo educator, animal presenter, wildlife rehabilitator, registrar and laboratory animal technician. Students have the opportunity to work closely with animals and staff at the Oregon Zoo and to gain additional experience in related fields and at many other unique facilities in the region.

This a seven term, full time program. All Biology and Management of Zoo Animal courses must be taken in sequential order in the course of study below and each course must be completed with a C or better in order to qualify for continuation in the program. The program is a Learning Partner of the Association of Zoos & Aquariums (AZA) and some courses may be eligible for credit towards AZA Professional Development Certificates.

**DEGREES AND CERTIFICATES OFFERED**

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

**Biology and Management of Zoo Animals**

**PREREQUISITES AND REQUIREMENTS**

College placement tests are administered through assessment centers.

1. High school diploma, GED certificate, or equivalent required.
2. Completion of WR 121 or higher with a C grade or better or previous degree.
3. Completing MTH 65, or MTH 63 with a C or better, or passing a math class with a C or better for which MTH 65 or higher level math skills are a prerequisite, or passing the PCC competency exam for MTH 65.
4. Completion of BI 112 or BI 211 and BI 212 or equivalent major’s biology coursework (including molecular/cellular/genetics components).
5. Completion of CH 151 or CH 104 or equivalent general chemistry course with laboratory.
6. Completion of a minimum of one additional course from the General Education/Discipline Studies list.
7. Documentation of computer literacy through CAS 133, equivalent coursework or experience.
8. A minimum of 20 documented hours of direct animal husbandry experience.

All prerequisite coursework and experience must be complete by the end of winter term prior to the early spring application deadline. Courses planned for spring term will not be considered. Pass/No Pass evaluation is not acceptable in the prerequisite courses.

The Biology and Management of Zoo Animals Program is a limited entry program with restricted enrollment. The admissions process is competitive and based on a point system including an interview process for those with initial high scores. Applicants with the highest final point totals will be accepted. Completing admission requirements and applying to the program does not guarantee admission. For our current advising guide and applications, when available, please visit the Biology of Management of Zoo Animals website.

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

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

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

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

BIOLOGY AND MANAGEMENT OF ZOO ANIMALS AAS DEGREE

Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

BIOLOGY AND MANAGEMENT OF ZOO ANIMALS DEGREE CREDIT SUMMARY

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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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<th>Course</th>
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Fourth Term

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<td>BMZA 240</td>
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Seventh Term

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<td>BMZA 270</td>
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<tr>
<td>BMZA 280B</td>
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</tbody>
</table>

Total Credits: **103**

* Could be used as General Education

BIOMEDICAL ENGINEERING TECHNOLOGY

See Electronic Engineering Technology (p. 92)

BIOSCIENCE TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
971-722-7257 or 971-722-7282 or 971-722-7254
www.pcc.edu/bio

CAREER AND PROGRAM DESCRIPTION

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

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

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Bioscience Technology

LESS THAN ONE-YEAR: CAREER PATHWAY

CERTIFICATE

Bioscience Technician

PREREQUISITES AND REQUIREMENTS

AAS Bioscience Technology: Placement into WR 121 and MTH 95

Bioscience Technician Certificate: Placement into WR 115, RD 115 and MTH 95

The Bioscience Technology program is a restricted entry program with limited enrollment. Contact the department for instructions. Students must receive a C or higher in all required bioscience courses in order to earn the certificate.

1 MTH 95 (p. 49) is not required for the degree, but a MTH 95 (p. 49) competency is an exit requirement. Placement into MTH 111 (p. 49) satisfies the MTH 95 (p. 49) competency. It is recommended that students take MTH 111 (p. 49) because it is useful for other Science and Physics courses.

BIOSCIENCE TECHNOLOGY AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

BIOSCIENCE TECHNOLOGY DEGREE CREDIT SUMMARY

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<td>CH</td>
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<td>WR</td>
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<td>Basic Science Electives</td>
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BIOSCIENCE TECHNOLOGY DEGREE COURSES

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<td>BI 126</td>
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<td>BI 181</td>
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<tr>
<td>CAS 170</td>
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<tr>
<td>CH 104</td>
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<tr>
<td>or CH 221</td>
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<tr>
<td>WR 121</td>
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<td>BIT 280A</td>
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<td>BIT 280B</td>
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<td>Basic Science Electives</td>
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<td>Remaining General Education</td>
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BASIC SCIENCE ELECTIVES

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<td>PHY 202</td>
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<tr>
<td>PHY 203</td>
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* Students who are interested in transferring to PSU for a BS degree in Biology will need to complete BI 211, BI 212, BI 213, CH 221, CH 222, and CH 223 in order to be eligible for placement in upper-division Biology and Chemistry courses at PSU.

BIOSCIENCE DEGREE ELECTIVES- (20 MUST BE BIT)

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<td>MT 121</td>
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<td>MT 122</td>
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<td>MT 222</td>
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* Quality Control Methods in Manufacturing
**BIO SCI ENCE TECHNICIAN: CAREER PATHWAY CERTIFICATE**

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

- **BIT 102** Current Topics in Bioscience Technology 2
- **BIT 105** Safety in the Bioscience Workplace 2
- **BIT 107** Bioscience Lab Math 2
- **BIT 109** Basic Laboratory Techniques and Instruments 5
- **BIT 125** Quality Systems in Bioscience Technology 2
- **BIT 126** Applied Quality Practice 3
- **BIT 181** Exploring Bioscience 3

**BUILDING CONSTRUCTION TECHNOLOGY**

Rock Creek Campus
Building 2, Room 210
971-722-7770–General Information
971-722-7631–Design/Build Remodeling
971-722-7430 or 971-722-7328–Building Construction
971-722-7475–Construction Management
www.pcc.edu/bct

**CAREER AND PROGRAM DESCRIPTION**

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

Building Construction Technology AAS Degree: This degree is designed to help students learn the skills a carpenter needs to build a house. Coursework includes hands-on instruction in the BCT shop, or at the BCT site, 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 Printreading, Materials and Methods, Building Codes, Estimating, Construction Math, Drafting, and Sustainable Building.

Graduates might work in the construction field as framers, carpenters, remodelers, site supervisors, concrete workers, siding installers, roofers, trim carpenters, etc. After gaining job site experience, graduates might eventually 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 coursework in this program option. Pass/No Pass grades are not accepted. Students must complete the coursework requirements outlined in the PCC catalog under Associates of Applied Science Degree. Students desiring to use this degree as their NKBA education requirement for the AKBD exam must complete a 160-hour internship with a company engaged in the kitchen and bath industry, in addition to the classes listed below.

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

**DEGREE 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

**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 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.

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Building Construction Technology (p. 51)
Building Construction Technology: Design/Build Remodeling Option (p. 52)
Building Construction Technology: Construction Management Option (p. 53)

**BUILDING CONSTRUCTION TECHNOLOGY AAS DEGREE**

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may...
be used as General Education. Math/computation competency is
met through the courses in the program of study indicated with a §
symbol. Students should consult with program advisors for course
planning.

BUILDING CONSTRUCTION TECHNOLOGY

DEGREE CREDIT SUMMARY

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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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Second Term

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Third Term

<table>
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Fourth Term

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<tr>
<td>BCT 223</td>
<td>3</td>
</tr>
<tr>
<td>BCT 229</td>
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</tr>
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</table>

Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BCT 203</td>
<td>6</td>
</tr>
<tr>
<td>BCT 219</td>
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</tr>
<tr>
<td>General Education</td>
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Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>BCT 204B</td>
<td>3</td>
</tr>
<tr>
<td>BCT 206</td>
<td>3</td>
</tr>
<tr>
<td>BCT 211</td>
<td>6</td>
</tr>
<tr>
<td>WR 227</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 96

§ Course cannot be substituted for another course.
* Could be used as General Education.

BUILDING CONSTRUCTION TECHNOLOGY

DEGREE ELECTIVES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 100</td>
<td>3</td>
</tr>
<tr>
<td>BCT 105</td>
<td>3</td>
</tr>
<tr>
<td>BCT 108</td>
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<tr>
<td>BCT 115</td>
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<tr>
<td>BCT 116</td>
<td>3</td>
</tr>
<tr>
<td>BCT 129</td>
<td>4</td>
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<tr>
<td>BCT 130</td>
<td>3</td>
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<tr>
<td>BCT 132</td>
<td>3</td>
</tr>
<tr>
<td>BCT 133</td>
<td>3</td>
</tr>
<tr>
<td>BCT 134</td>
<td>3</td>
</tr>
<tr>
<td>BCT 150</td>
<td>4</td>
</tr>
<tr>
<td>BCT 202C</td>
<td>3</td>
</tr>
<tr>
<td>BCT 202D</td>
<td>3</td>
</tr>
<tr>
<td>BCT 204C</td>
<td>3</td>
</tr>
<tr>
<td>BCT 206</td>
<td>3</td>
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<tr>
<td>BCT 213</td>
<td>3</td>
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<td>BCT 214</td>
<td>3</td>
</tr>
<tr>
<td>BCT 216</td>
<td>2</td>
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<tr>
<td>BCT 217</td>
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<td>BCT 218</td>
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<td>BCT 226</td>
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</tr>
<tr>
<td>BCT 229</td>
<td>2</td>
</tr>
<tr>
<td>BCT 244</td>
<td>2</td>
</tr>
<tr>
<td>BCT 280A</td>
<td>1-12</td>
</tr>
<tr>
<td>BCT 280C</td>
<td>1-5</td>
</tr>
</tbody>
</table>

DESIGN/BUILD REMODELING AAS DEGREE
Minimum 103 credits. Students must also meet Associate Degree
Comprehensive Requirements and Associate of Applied Science
Requirements. Students must complete a total of sixteen credits of
General Education. Some courses specified within the program may
be used as General Education. Math/computation competency is
met through the courses in the program of study indicated with a §
symbol. Students should consult with program advisors for course
planning.

DESIGN/BUILD REMODELING DEGREE CREDIT

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BCT</td>
<td>71</td>
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<tr>
<td>ARCH</td>
<td>7</td>
</tr>
<tr>
<td>COMM</td>
<td>4</td>
</tr>
<tr>
<td>ID</td>
<td>9</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
</tr>
<tr>
<td>Total Credits</td>
<td>103</td>
</tr>
</tbody>
</table>

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

### PORTLAND COMMUNITY COLLEGE

### 2014-2015

### First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>3</td>
<td>Graphic Communication for Designers</td>
</tr>
<tr>
<td>BCT 102</td>
<td>3</td>
<td>Residential Printreading</td>
</tr>
<tr>
<td>BCT 103</td>
<td>3</td>
<td>Residential Materials and Methods</td>
</tr>
<tr>
<td>BCT 104$</td>
<td>3</td>
<td>Construction Math</td>
</tr>
<tr>
<td>BCT 106</td>
<td>3</td>
<td>Hand Tool/Power Tool Use and Safety</td>
</tr>
</tbody>
</table>

### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>2</td>
<td>Introduction to Architectural Drawing</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>2</td>
<td>Residential Building Codes</td>
</tr>
<tr>
<td>BCT 127</td>
<td>3</td>
<td>Residential Concrete</td>
</tr>
<tr>
<td>COMM 215*</td>
<td>4</td>
<td>Small Group Communication: Process and Theory</td>
</tr>
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</table>

BCT CAD Electives

### Third Term

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

BCT CAD Electives

### Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 128</td>
<td>6</td>
<td>Exterior Finish</td>
</tr>
<tr>
<td>BCT 129</td>
<td>4</td>
<td>Mechanical Planning for Kitchens and Baths</td>
</tr>
<tr>
<td>BCT 202C</td>
<td>3</td>
<td>Business Principles for Construction</td>
</tr>
<tr>
<td>BCT 229</td>
<td>2</td>
<td>Introduction to Kitchens and Baths</td>
</tr>
</tbody>
</table>

General Education

### Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 203</td>
<td>6</td>
<td>Interior Finish</td>
</tr>
<tr>
<td>BCT 219</td>
<td>6</td>
<td>Cabinetmaking I</td>
</tr>
<tr>
<td>ID 238</td>
<td>4</td>
<td>Advanced Kitchen and Bath Planning</td>
</tr>
</tbody>
</table>

General Education

### Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 204B</td>
<td>3</td>
<td>Construction Estimating - Residential</td>
</tr>
<tr>
<td>BCT 206</td>
<td>3</td>
<td>Sustainable Construction Practices</td>
</tr>
<tr>
<td>BCT 211</td>
<td>6</td>
<td>Remodeling</td>
</tr>
<tr>
<td>BCT 244</td>
<td>2</td>
<td>Kitchen and Bath Cabinet Installation</td>
</tr>
</tbody>
</table>

General Education

### Total Credits: 103

*$^*$ Course cannot be substituted for another course

### CONSTRUCTION MANAGEMENT AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a $^*$ symbol. Students should consult with program advisors for course planning.

### CONSTRUCTION MANAGEMENT DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT</td>
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<tr>
<td>ARCH</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>CG</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>COMM</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CAD Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 94

### 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>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 100</td>
<td>3</td>
<td>Overview to the Construction Industry</td>
</tr>
<tr>
<td>BCT 102$</td>
<td>3</td>
<td>Residential Printreading</td>
</tr>
<tr>
<td>BCT 103$</td>
<td>3</td>
<td>Residential Materials and Methods</td>
</tr>
<tr>
<td>BCT 104$</td>
<td>3</td>
<td>Construction Math</td>
</tr>
</tbody>
</table>

General Education

### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>2</td>
<td>Introduction to Architectural Drawing</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>2</td>
<td>Residential Building Codes</td>
</tr>
<tr>
<td>BCT 134</td>
<td>3</td>
<td>Construction Scheduling</td>
</tr>
<tr>
<td>BCT 202C</td>
<td>3</td>
<td>Business Principles for Construction</td>
</tr>
</tbody>
</table>

BCT CAD Electives

### Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ARCH 133</td>
<td>2</td>
<td>Commercial Building Codes</td>
</tr>
<tr>
<td>BCT 221</td>
<td>3</td>
<td>Construction Law for the Contractor</td>
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</table>

BCT CAD Electives

### Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>BCT 150</td>
<td>4</td>
<td>Mechanical, Electrical and Plumbing</td>
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<tr>
<td>BCT 213</td>
<td>3</td>
<td>Commercial Printreading</td>
</tr>
<tr>
<td>or ARCH 162</td>
<td>3</td>
<td>Commercial Print Reading</td>
</tr>
<tr>
<td>CG 209</td>
<td>1</td>
<td>Job Finding Skills</td>
</tr>
<tr>
<td>WR 227</td>
<td>4</td>
<td>Technical and Professional Writing</td>
</tr>
<tr>
<td>BCT Computer App Electives $^2$</td>
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</tbody>
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### Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>BCT 204C</td>
<td>3</td>
<td>Construction Estimating - Commercial</td>
</tr>
<tr>
<td>BCT 206</td>
<td>3</td>
<td>Sustainable Construction Practices</td>
</tr>
<tr>
<td>BCT 222</td>
<td>3</td>
<td>Engineering for Constructors</td>
</tr>
</tbody>
</table>

or ARCH 122 Structural Systems

BCT Computer App Electives $^2$ 3

General Education

### Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>BCT 130</td>
<td>3</td>
<td>Construction Safety</td>
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<tr>
<td>BCT 207</td>
<td>3</td>
<td>Construction Job Costing</td>
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<td>BCT 214</td>
<td>3</td>
<td>Advanced Construction Estimating</td>
</tr>
<tr>
<td>BCT 225</td>
<td>3</td>
<td>Construction Project Management</td>
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</table>

General Education

### Seventh Term

<table>
<thead>
<tr>
<th>Course</th>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>BCT 280A$^3$</td>
<td>3</td>
<td>Cooperative Education: Building Construction</td>
</tr>
</tbody>
</table>

Total Credits: 94

*$^*$ Course cannot be substituted for another course.

$^*$ Could be used for General Education.

1 Class may be challenged by petitioning for course by examination.

2 CAS 171 may be substituted for CAS 170
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.

BCT CAD ELECTIVES
ARCH 126 Introduction to AutoCAD 3
ARCH 127 Introduction to Google SketchUp 3
ARCH 136 Intermediate AutoCAD 3
ARCH 237 Introduction to Revit Architecture 3
ARCH 247 Intermediate Revit Architecture 3
BCT 105 Vectorworks for Constructors 3
BCT 209 VectorWorks for Contractors II 3

BCT COMM ELECTIVES
COMM 111 Public Speaking 4
COMM 215 Small Group Communication: Process and Theory 4

BCT COMPUTER APPLICATION ELECTIVES
CAS 133 Basic Computer Skills/Microsoft Office 4
CAS 140 Beginning Access 3
CAS 170 Beginning Excel 3
CAS 171 Intermediate Excel 3
CAS 220 Project Management - Beginning MS Project 3

BUILDING CONSTRUCTION TECHNOLOGY LESS THAN ONE-YEAR CERTIFICATE
Minimum 37 credits. Students must meet all certificate requirements. The Building Construction Technology Certificate is a related certificate. All courses are contained in the Building Construction Technology AAS Degree.

BUILDING CONSTRUCTION TECHNOLOGY CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BCT</td>
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<tr>
<td>ARCH</td>
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</tr>
<tr>
<td>Total</td>
<td>37</td>
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</table>

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

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>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 Math 3</td>
</tr>
<tr>
<td>BCT 106</td>
<td>Hand Tool/Power Tool Use and 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>
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<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>
</tr>
</thead>
<tbody>
<tr>
<td>BCT 120</td>
<td>Floor Framing 3</td>
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<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>

Total Credits: 37

BUSINESS ADMINISTRATION
Cascade Campus
Technology Education Building (TEB), Room 205
971-722-5224

Rock Creek Campus
Building 2, Room 210
971-722-7770

Southeast Campus
Mt. Scott Hall (MSH), Room 214
971-722-6146

Sylvania Campus
Technology Classroom Building (TCB), Room 312
971-722-4292

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 (p. 15) in this catalog. Placement tests are available for writing and math. Additional requirements for individual business courses are listed in the Course Description section of this catalog.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Accounting
Management
Retail Management

ONE-YEAR CERTIFICATE
Accounting Clerk
Marketing

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Retail Sales and Service
Entry-Level Accounting Clerk

ASSOCIATE OF APPLIED SCIENCE DEGREE
Accounting (p. 54)
Management (p. 55)
Marketing (p. 56)
Retail Management (p. 56)

ACCOUNTING AAS DEGREE
Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in
the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**ACCOUNTING DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA</td>
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<tr>
<td>CAS</td>
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<tr>
<td>EC</td>
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<tr>
<td>OS</td>
<td>1</td>
</tr>
<tr>
<td>PHL/BA</td>
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</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Remaining General Education</td>
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<tr>
<td>Business Program Electives</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</tr>
</tbody>
</table>

**ACCOUNTING DEGREE COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</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>Introduction to Business Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 177</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>Business Communication Using 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>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 222</td>
<td>Financial Management</td>
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<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>3</td>
</tr>
<tr>
<td>or BA 242</td>
<td>Introduction to Investments</td>
<td></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 Word</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
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<tr>
<td>or CAS 217</td>
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<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
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<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
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</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
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<tr>
<td>Choose one of the following:</td>
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<tr>
<td>PHL 202</td>
<td>Ethics</td>
<td>4</td>
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<tr>
<td>PHL 209</td>
<td>Business Ethics ¹</td>
<td></td>
</tr>
<tr>
<td>BA 277</td>
<td>Business Practices and Contemporary Social Issues</td>
<td></td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Business Program Electives (see list below)</td>
<td>11</td>
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<tr>
<td>Remaining General Education</td>
<td>8</td>
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</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>92</strong></td>
<td></td>
</tr>
</tbody>
</table>

¹ Could be used as General Education

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 BA 211 in the second term.

**MANAGEMENT DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
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<td>38</td>
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<tr>
<td>CAS</td>
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<td>EC</td>
<td>4</td>
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<td>OS</td>
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<td>WR</td>
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<td>Management Degree Electives</td>
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<td>Management Support Electives</td>
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<tr>
<td><strong>Total Credits</strong></td>
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**MANAGEMENT DEGREE COURSES**

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<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
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<tr>
<td>BA 111</td>
<td>Introduction to Accounting ¹</td>
<td>3</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 205</td>
<td>Business Communication Using 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>
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<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
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<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
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<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
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<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 121</td>
<td>Beginning Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td></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></td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 217</td>
<td>Intermediate Word</td>
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<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
<td>4</td>
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<tr>
<td>or EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
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<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
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<tr>
<td>WR 121</td>
<td>English Composition</td>
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<td>Management Support Electives</td>
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<tr>
<td>Management Degree Electives</td>
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<tr>
<td>Remaining General Education</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</table>

¹ EC 201 and EC 202 could be used as General Education

² Complete 12 BA Credits before enrolling

**MANAGEMENT DEGREE ELECTIVES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>BA 177</td>
<td>Payroll Accounting</td>
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<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
<td>4</td>
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</table>

* 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 follow at the end of the Business Administration section.

² Complete 12 BA Credits before enrolling
BA 213 Managerial Accounting 4
BA 218 Personal Finance 3
BA 228 Computer Accounting Applications 3
BA 238 Sales 3
BA 239 Advertising 3
BA 242 Introduction to Investments 3
BA 250 Small Business Management 3
BA 280A Cooperative Education: Business Experience 2-6
BA 280B Cooperative Education: Business Experience - Seminar 1

MANAGEMENT SUPPORT ELECTIVES
CAS 109 Beginning PowerPoint 1
CAS 111D Beginning Website Creation: Dreamweaver 3
CAS 140 Beginning Access 3
CAS 171 Intermediate Excel 3
CAS 217 Intermediate Word 3
CAS 231 Publisher 3
OS 240 Filing and Records Management 4

MARKETING AAS DEGREE
Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

MARKETING DEGREE CREDIT SUMMARY

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<td>CAS</td>
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<td>COMM</td>
<td>4</td>
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<tr>
<td>EC</td>
<td>4</td>
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<tr>
<td>WR</td>
<td>4</td>
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<tr>
<td>Business Program Electives</td>
<td>13</td>
</tr>
<tr>
<td>Co-op Ed or Marketing CAS Elective</td>
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<tr>
<td>Remaining General Education</td>
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</tr>
<tr>
<td>Total Credits</td>
<td>92</td>
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</table>

MARKETING DEGREE COURSES
BA 101 Introduction to Business 4
BA 111 Introduction to Accounting 1 3
BA 131 Introduction to Business Technology 4
BA 203 Introduction to International Business 3
BA 205 Business Communication Using Technology 4
BA 211 Principles of Accounting I 3
BA 223 Principles of Marketing 4
BA 226 Business Law I 4
BA 234 International Marketing 2 3
BA 238 Sales 3
BA 239 Advertising 3
BA 249 Principles of Retailing and E-tailing 3
BA 250 Small Business Management 3
BA 285 Human Relations-Organizations 3
Choose one of the following:

BA 280A Cooperative Education: Business Experience 3
BA 280B Cooperative Education: Business Experience - Seminar 3

Marketing CAS Elective
CAS 121 Beginning Keyboarding 3 3
CAS 170 Beginning Excel 3
CAS 216 Beginning Word 3
COMM 111 Public Speaking 4
EC 200 Introduction to Economics 4
WR 121 English Composition 4
Business Program Electives (see list below) 13
Remaining General Education 8

* Could be used as General Education
1 Students who have completed high school bookkeeping or have had work experience with full-cycle bookkeeping responsibilities should substitute a Business elective and start the accounting series with BA 211 in the second term. Business Program electives are listed at the end of the business administration section.
2 May substitute Business elective.
3 Students who can touch type should substitute a Business elective.

MARKETING CAS ELECTIVES
CAS 111D Beginning Website Creation: Dreamweaver 3
CAS 140 Beginning Access 3
CAS 171 Intermediate Excel 3
CAS 231 Publisher 3

Business Program Electives (p. 57)

RETAIL MANAGEMENT AAS DEGREE
Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

RETAIL MANAGEMENT DEGREE CREDIT SUMMARY

<table>
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<td>HE</td>
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<td>MTH</td>
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<td>WR</td>
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<td>Business Program Electives</td>
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<td>Total Credits</td>
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RETAIL MANAGEMENT DEGREE COURSES
BA 111 Introduction to Accounting 1 3
or BA 211 Principles of Accounting I 3
CIS 120 Computer Concepts I * 4
or BA 131 Introduction to Business Technology 3
BA 205 Business Communication Using Technology 4
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
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<td>BA 206</td>
<td>Management Fundamentals</td>
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<td>BA 212</td>
<td>Principles of Accounting II</td>
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<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
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<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
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<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>3</td>
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<tr>
<td>BA 236</td>
<td>Sales</td>
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<tr>
<td>BA 237</td>
<td>Principles of Retailing and E-tailing</td>
<td>3</td>
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<tr>
<td>BA 249</td>
<td>Sales</td>
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<td>BA 250</td>
<td>Small Business Management</td>
<td>3</td>
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<tr>
<td>BA 251</td>
<td>Office Management</td>
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<tr>
<td>BA 280A</td>
<td>Cooperative Education: Business Experience</td>
<td>2</td>
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<td>BA 285</td>
<td>Human Relations-Organizations</td>
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<td>COMMIT 111</td>
<td>Public Speaking</td>
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<tr>
<td>COMMIT 130</td>
<td>Business &amp; Professional Communication</td>
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<tr>
<td>COMMIT 140</td>
<td>Introduction to Intercultural Communication</td>
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<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
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<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
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<tr>
<td>HE 112</td>
<td>Standard First Aid and Emergency Care</td>
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<td>MTH 30</td>
<td>Business Mathematics (or higher)</td>
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<td>or MTH 60</td>
<td>Introductory Algebra - First Term</td>
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<td>WR 121</td>
<td>English Composition</td>
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<tr>
<td>Remaining General Education</td>
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<td></td>
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<tr>
<td>Business Program Electives (see list below)</td>
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<tr>
<td>Total Credits</td>
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</tbody>
</table>

* CIS 120 could be used as General Education
1 Students that have not taken high school bookkeeping or have no work experience with full cycle bookkeeping should take BA 111 Introduction to Accounting before enrolling in BA 211.

**BUSINESS PROGRAM ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BA 131</td>
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<td>BA 141</td>
<td>Introduction to International Business Law</td>
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<td>BA 177</td>
<td>Payroll Accounting</td>
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<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
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<td>BA 205</td>
<td>Business Communication Using Technology</td>
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<td>BA 206</td>
<td>Management Fundamentals</td>
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<td>BA 207</td>
<td>Introduction to E-Commerce</td>
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<tr>
<td>BA 208</td>
<td>Introduction to Nonprofits &amp; Philanthropy</td>
<td>3</td>
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<tr>
<td>BA 209</td>
<td>Introduction to Grant Writing</td>
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<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
<td>1</td>
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<tr>
<td>BA 212</td>
<td>Principles of Accounting II</td>
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<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
<td>4</td>
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<td>BA 215</td>
<td>Basic Cost Accounting</td>
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<td>BA 218</td>
<td>Personal Finance</td>
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<td>BA 222</td>
<td>Financial Management</td>
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<td>BA 223</td>
<td>Principles of Marketing</td>
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<tr>
<td>BA 226</td>
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<td>BA 227</td>
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<td>BA 228</td>
<td>Computer Accounting Applications</td>
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<td>BA 234</td>
<td>International Marketing</td>
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<td>BA 235</td>
<td>Social Media Marketing</td>
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<td>BA 237</td>
<td>Fundamentals of Import/Export</td>
<td>3</td>
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<td>BA 238</td>
<td>Sales</td>
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<td>BA 239</td>
<td>Advertising</td>
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<td>BA 240</td>
<td>Nonprofit Financial Management and Accounting</td>
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<td>BA 242</td>
<td>Introduction to Investments</td>
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<td>Principles of Retailing and E-tailing</td>
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<td>Business Practices and Contemporary Social Issues</td>
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<td>BA 280A</td>
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<td>BA 9235</td>
<td>Financial Statement Analysis I</td>
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<td>BA 9703</td>
<td>Income Tax Preparation: Basic</td>
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<td>BA 9706</td>
<td>Income Tax Preparation: Advanced</td>
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<tr>
<td>CAS 109</td>
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<td>CAS 111D</td>
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<td>CAS 123</td>
<td>Production Keyboarding</td>
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<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
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<td>CAS 231</td>
<td>Publisher</td>
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<td>Integrated Computer Projects</td>
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<td>Filing and Records Management</td>
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<td>RE 100</td>
<td>Introduction to Real Estate</td>
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<tr>
<td>RE 250</td>
<td>Real Estate Investments I</td>
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These business electives apply to all business administration degrees and certificates that have Business Program Electives identified in the curriculum.

**ONE-YEAR CERTIFICATE**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<tr>
<td>Marketing (p. 58)</td>
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<tr>
<td>Nonprofit Community Development (p. 59)</td>
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**LESS THAN ONE-YEAR CERTIFICATE**

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<th>Course Code</th>
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<td>Retail Management (p. 59)</td>
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**LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE**

<table>
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<td>Retail Sales and Service (p. 60)</td>
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<tr>
<td>Entry-Level Accounting Clerk (p. 58)</td>
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**ACCOUNTING CLERK ONE-YEAR CERTIFICATE**

Minimum 48 credits. Students must meet certificate requirements.

<table>
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<td>CAS 9105</td>
<td>Accounting Clerk</td>
<td>3</td>
</tr>
<tr>
<td>OS 9105</td>
<td>Accounting Clerk</td>
<td>1</td>
</tr>
<tr>
<td>WR 9105</td>
<td>Accounting Clerk</td>
<td>4</td>
</tr>
</tbody>
</table>
Accounting Clerk CAS Electives 3
Accounting Clerk EC Electives 4
Business Program Electives 3

Total Credits 48

ACCOUNTING CLERK CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
</tr>
<tr>
<td>BA 177</td>
<td>Payroll Accounting</td>
</tr>
<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BA 212</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
</tr>
<tr>
<td>CAS 121</td>
<td>Beginning Keyboarding</td>
</tr>
<tr>
<td>or CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
<tr>
<td>Accounting Clerk CAS Electives 3</td>
<td></td>
</tr>
<tr>
<td>Accounting Clerk Economics Electives 4</td>
<td></td>
</tr>
</tbody>
</table>

Business Program Electives (see list below) 3
Total Credits 48

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

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

3 Students considering the Associate of Applied Science (Accounting) degree are recommended to take EC 201 or EC 202.

ACCOUNTING CLERK COMPUTER APPLICATIONS ELECTIVES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
</tr>
<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
</tr>
</tbody>
</table>

ACCOUNTING CLERK ECONOMICS ELECTIVES

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

Business Program Electives (p. 57)

ACCELERATED ACCOUNTING LESS THAN ONE-YEAR CERTIFICATE

Minimum 29 credits. Students must all meet certificate requirements.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
</tr>
<tr>
<td>BA 177</td>
<td>Payroll Accounting</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
</tr>
<tr>
<td>CAS 121</td>
<td>Beginning Keyboarding</td>
</tr>
<tr>
<td>or CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
</tr>
<tr>
<td>WR 90</td>
<td>Writing 90</td>
</tr>
<tr>
<td>WR 115</td>
<td>Introduction to Expository Writing</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
<tr>
<td>Business Program Electives (see list below) 3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 29

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 BA 211 in the second term.

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

Business Program Electives (p. 57)

ENTRY-LEVEL ACCOUNTING CLERK: CAREER PATHWAY CERTIFICATE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
</tr>
</tbody>
</table>

Total Credits 14

MARKETING ONE-YEAR CERTIFICATE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
</tr>
</tbody>
</table>

Total Credits 45

MARKETING CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA</td>
<td>12</td>
</tr>
<tr>
<td>CAS</td>
<td>9</td>
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<tr>
<td>CG</td>
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<td>OS</td>
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</tr>
<tr>
<td>WR</td>
<td>3</td>
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<tr>
<td>Business Program Electives</td>
<td>6</td>
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</tbody>
</table>

Total Credits 45
### PROGRAMS & DISCIPLINES

**PORTLAND COMMUNITY COLLEGE**  
**2014-2015**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</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 249</td>
<td>Principles of Retailing and E-tailing</td>
<td>3</td>
</tr>
<tr>
<td>BA 280A</td>
<td>Cooperative Education: Business Experience</td>
<td>3</td>
</tr>
<tr>
<td>BA 280B</td>
<td>Cooperative Education: Business Experience - Seminar</td>
<td>1</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 121A</td>
<td>Beginning Keyboarding</td>
<td>2</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

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

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

**Business Program Electives (p. 57)**

### NONPROFIT COMMUNITY DEVELOPMENT CERTIFICATE

Minimum 33 credits. Students must also meet certificates requirements.

#### NONPROFIT COMMUNITY DEVELOPMENT CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>COMM</td>
<td></td>
<td>8</td>
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<td>EC</td>
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<td>4</td>
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<tr>
<td>PS</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>SOC</td>
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<td>4</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Nonprofit Community Development Electives</td>
<td></td>
<td><strong>8</strong></td>
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<tr>
<td>Total Credits</td>
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</table>

### NONPROFIT COMMUNITY DEVELOPMENT CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>or BA 255</td>
<td>Project Management - Business Environments</td>
<td></td>
</tr>
<tr>
<td>or BA 208</td>
<td>Introduction to Nonprofits &amp; Philanthropy</td>
<td></td>
</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>COMM 140</td>
<td>Introduction to Intercultural Communication</td>
<td>4</td>
</tr>
<tr>
<td>or COMM 214</td>
<td>Interpersonal Communication: Process and Theory</td>
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</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>PS 203</td>
<td>State and Local Government</td>
<td>4</td>
</tr>
<tr>
<td>SOC 204</td>
<td>Sociology in Everyday Life</td>
<td>4</td>
</tr>
<tr>
<td>or SOC 205</td>
<td>Social Change in Societies</td>
<td></td>
</tr>
<tr>
<td>or SOC 206</td>
<td>Social Problems</td>
<td></td>
</tr>
<tr>
<td>Nonprofit Community Development Electives</td>
<td></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td>Nonprofit Community Development Cooperative Education Electives</td>
<td></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

### NONPROFIT COMMUNITY DEVELOPMENT CERTIFICATE ELECTIVES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
<td>4</td>
</tr>
</tbody>
</table>

### RETAIL MANAGEMENT LESS THAN ONE-YEAR CERTIFICATE

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

#### RETAIL MANAGEMENT CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA</td>
<td></td>
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<tr>
<td>BA/CIS</td>
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<tr>
<td>COMM</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

### RETAIL MANAGEMENT CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
<td>4</td>
</tr>
<tr>
<td>or CIS 120</td>
<td>Computer Concepts I</td>
<td></td>
</tr>
<tr>
<td>BA 205</td>
<td>Business Communication Using 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 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>MTH 30</td>
<td>Business Mathematics (or higher)</td>
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</tr>
<tr>
<td>or MTH 60</td>
<td>Introductory Algebra - First Term</td>
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</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td><strong>35</strong></td>
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</tbody>
</table>
RETAIL SALES AND SERVICE: CAREER PATHWAY CERTIFICATE
Minimum 13 credits. Students must also meet certificate requirements. The Retail Sales and Service Certificate is a career pathway. All courses are contained in the Retail Management AAS Degree.

- BA 111 Introduction to Accounting 3
- BA 131 Introduction to Business Technology 4
- BA 249 Principles of Retailing and E-tailing 3
- BA 285 Human-Relations-Organizations 3

Total Credits 13

BUSINESS PROGRAM ELECTIVES

BA 131 Introduction to Business Technology 4
BA 141 Introduction to International Business Law 3
BA 177 Payroll Accounting 3
BA 203 Introduction to International Business 3
BA 205 Business Communication Using Technology 4
BA 206 Management Fundamentals 3
BA 207 Introduction to E-Commerce 4
BA 208 Introduction to Nonprofits & Philanthropy 4
BA 209 Introduction to Grant Writing 4
BA 211 Principles of Accounting I 4
BA 212 Principles of Accounting II 4
BA 213 Managerial Accounting 3
BA 215 Basic Cost Accounting 3
BA 218 Personal Finance 3
BA 222 Financial Management 3
BA 223 Principles of Marketing 4
BA 224 Human Resource Management 4
BA 226 Business Law I 3
BA 227 Business Law II 3
BA 228 Computer Accounting Applications 3
BA 234 International Marketing 3
BA 235 Social Media Marketing 4
BA 237 Fundamentals of Import/Export 4
BA 238 Sales 3
BA 239 Advertising 4
BA 240 Nonprofit Financial Management and Accounting 3
BA 242 Introduction to Investments 4
BA 249 Principles of Retailing and E-tailing 3
BA 250 Small Business Management 3
BA 255 Project Management - Business Environments 3
BA 256 Income Tax 3
BA 277 Business Practices and Contemporary Social Issues 4
BA 280A Cooperative Education: Business Experience 1-6
BA 280B Cooperative Education: Business Experience - Seminar 1
BA 285 Human Relations-Organizations 3
BA 9235 Financial Statement Analysis I 3
BA 9703 Income Tax Preparation: Basic 8
BA 9706 Income Tax Preparation: Advanced 3
CAS 109 Beginning PowerPoint 1
CAS 111D Beginning Website Creation: Dreamweaver 3
CAS 122 Keyboarding for Speed and Accuracy 3
CAS 123 Production Keyboarding 3
CAS 133 Basic Computer Skills/Microsoft Office 4
CAS 140 Beginning Access 3
CAS 170 Beginning Excel 3
CAS 171 Intermediate Excel 3
CAS 216 Beginning Word 3
CAS 216A Beginning Word 1
CAS 217 Intermediate Word 3
CAS 231 Publisher 3
CAS 246 Integrated Computer Projects 4
OS 131 10-key on Calculators 1
OS 240 Filing and Records Management 4
RE 100 Introduction to Real Estate 3
RE 250 Real Estate Investments I 3

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

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 credits; includes 16 credit of required courses and 15 credits of restricted electives.

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

INTERNATIONAL BUSINESS PROGRAM AWARD CORE COURSES

BA 141 Introduction to International Business Law 3
BA 203 Introduction to International Business 3
BA 234 International Marketing 3
BA 237 Fundamentals of Import/Export 3
EC 230 Contemporary World Economic Issues: International Economics or PS 205 Global Politics: Conflict & Cooperation 3-4

International Business Electives 15

INTERNATIONAL BUSINESS ELECTIVES

ATH 207 Cultural Anthropology: Culture Concepts 4
ATH 208 Cultural Anthropology: Cultures of the World 4
ATH 209 Cultural Anthropology: Cultural Growth & Change 4
BA 101 Introduction to Business 4
BA 131 Introduction to Business Technology 4
BA 205 Business Communication Using Technology 4
BA 206 Management Fundamentals 3
BA 211 Principles of Accounting I 3
BA 212 Principles of Accounting II 3
BA 213 Managerial Accounting 4
BA 222 Financial Management 3
BA 223 Principles of Marketing 4
CHICANO/LATINO STUDIES

DESCRIPTION

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

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

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

CHINESE

DESCRIPTION

All PCC Chinese courses are taught using an immersion method. The objective of all Chinese courses at PCC is to help students to develop communicative competence and proficiency in comprehension, speaking, reading, and writing Chinese as well as cultural awareness. The Chinese curriculum at PCC is designed in accordance with the Chinese program at Portland State University, where students learn traditional Chinese characters during their First Year Chinese courses and simplified characters during Second Year Chinese courses. Students who complete First and Second Year Chinese courses at PCC are strongly encouraged to apply for a Chinese major or minor at PSU. Assessment is based on consistent attendance, active participation, and written and oral assignments.

There are no requirements or prerequisites for entry into the first term of First Year Chinese. However, the student should read the Chinese course descriptions for other Chinese courses. Students who have studied a language before and are unsure of their placement are encouraged to consult with a world language teacher since they will be on the waiting list. Students who complete First and Second Year Chinese courses at PCC and simplified characters during Second Year Chinese courses.

CIVIL ENGINEERING TECHNOLOGY

DESCRIPTION

Civil engineering technicians are problem-solvers, working as part of a team involved in the planning, design, construction, operation, and management of many types of projects. These may include buildings, bridges, dams, highways, rapid transit facilities, airport
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, written and oral communication, computer software use, and computer-aided drawing. While providing a curriculum strong in mathematics and engineering topics, our teaching format also emphasizes 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

DEGREE SUMMARY

DEGREES AND CERTIFICATES OFFERED

TWO-YEAR CERTIFICATE
Civil Engineering Technology

PREREQUISITES AND REQUIREMENTS

CET is a limited-entry program. Prospective students must meet with an engineering technology advisor prior to registering for any CMET courses.

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 test score
2. MTH 60 or higher, or equivalent placement test score

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

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

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 coursework appropriate to each student’s goals.

ASSOCIATE OF APPLIED SCIENCE DEGREE
Civil Engineering Technology (p. 62)
Civil Engineering Technology: Green Technology and Sustainability Option (p. 63)

CIVIL ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

CIVIL ENGINEERING TECHNOLOGY DEGREE

CREDIT SUMMARY

First Term
CMET 110 Statics
CMET 111 Engineering Technology Orientation
CMET 112 Technical Algebra/Trigonometry
ENGR 102 Engineering Graphics

Second Term
CMET 121 Strength of Materials
CMET 122 Technical Engineering Physics
CMET 123§ Technical Algebra with Analytic Geometry
WR 121 English Composition

Third Term
CMET 131§ Applied Calculus
CMET 213 Fluid Mechanics
CMET 227 Applied Electricity Fundamentals
General Education
CMET 280A Cooperative Ed: Civil/Mechanical Engineering Technology

Note: CMET 280A is optional and available after completing term three.

Fourth Term
ENGR 226 Plane Surveying
CMET 133 Materials Technology
CMET 221 Environmental Systems

2014-2015
CH 101^* Inorganic Chemistry Principles  
COMM 100^* Introduction to Communication  
or COMM 111 Public Speaking  

Fifth Term  
CMET 228 Construction Materials  
CMET 212 Thermodynamics I  
CMET 211 Environmental Quality  
CMET 241 Structural Steel Drafting  
CMET 254 Civil/Mechanical Engineering Technology Seminar  

General Education  
Sixth Term  
CMET 214 Surveying II  
CMET 233 CET Applied Computer Aided Design  
CMET 222 Thermodynamics II  
CMET 223 Project Management  
CMET 236 Structural Design  

Total Credits: 101  

^* May be be used as General Education  

GREEN TECHNOLOGY AND SUSTAINABILITY AAS DEGREE  
Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.  

GREEN TECHNOLOGY AND SUSTAINABILITY DEGREE CREDIT SUMMARY  
CMET  74  
CH  5  
COMM  4  
EET  3  
ENGR  7  
GEO  4  
SOC  4  
Remaining General Education  7  

Total Credits  108  

^* May be used as General Education  

CIVIL ENGINEERING TECHNOLOGY TWO-YEAR CERTIFICATE  
Minimum 67 credits. Students must also meet certificate requirements. The Civil Engineering Technology Certificate is a related certificate. All courses are contained in the Civil Engineering Technology AAS Degree.  

CIVIL ENGINEERING TECHNOLOGY CERTIFICATE CREDIT SUMMARY  
CMET  50  
CH  5  
COMM  4  
WR  4  
General Education  4  

Total Credits  67  

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

First Term  
CMET 110 Statics  4  
CMET 111 Engineering Technology Orientation  4  
CMET 112 Technical Algebra/Trigonometry  4  
CMET 121 Strength of Materials  4  
CMET 122 Technical Engineering Physics  4  
CMET 123 Technical Algebra with Analytic Geometry §  4  
CMET 131 Applied Calculus  8  
CMET 133 Materials Technology  3  
CMET 211 Environmental Quality  4  
CMET 212 Thermodynamics I  4  
CMET 213 Fluid Mechanics  3  
CMET 214 Surveying II  3  
CMET 221 Environmental Systems  3  
CMET 222 Thermodynamics II  4  
CMET 223 Project Management  3  
CMET 227 Applied Electricity Fundamentals  2  
CMET 228 Construction Materials  3  
CMET 233 CET Applied Computer Aided Design  3  
CMET 236 Structural Design  3  
CMET 241 Structural Steel Drafting  3  
CMET 254 Civil/Mechanical Engineering Technology Seminar  1  
CMET 280A Cooperative Ed: Civil/Mechanical Engineering Technology  0  
CH 101 Inorganic Chemistry Principles  5  
COMM 100 Introduction to Communication ^*  4  
or COMM 111 Public Speaking  4  
EET 110 Introduction to Renewable Energy  3  
ENGR 102 Engineering Graphics  3  
ENGR 226 Plane Surveying  4  
GEO 265 Introduction to GIS (Geographical Information Systems) ^*  4  
SOC 228 Introduction to Environmental Sociology ^*  4  
Remaining General Education  7  

Total Credits  108  

^* May be used as General Education  

Second Term  
CMET 121 Strength of Materials  4  
CMET 122 Technical Engineering Physics  4  
CMET 123 Technical Algebra with Analytic Geometry §  4  
WR 121 English Composition  4  

Third Term  
CMET 131 Applied Calculus  8  

Credits
COMMUNICATION STUDIES

DESCRIPTION

Communication Studies is the study of human communication processes. Our courses focus on both theory and practice to help students improve communication competence in a variety of contexts. Communication Studies courses build communication knowledge and skills needed to develop, manage and maintain various types of relationships. Students learn how humans share symbols to create meaning; students critically analyze and apply methods of informing and persuading in interpersonal, small-group, intercultural, business, public speaking, mass media and new media contexts.

Communication Studies is a dynamic discipline. Courses at PCC provide foundation in the discipline and prepare students for transfer into upper division courses. An Oral Communication course is a requirement for completion of the AAOT (Associate of Arts Oregon Transfer). Select COMM courses also fulfill this requirement as well as requirements for specific certificate programs.

A Focus Award recognizes students who have gained considerable knowledge in Communication Studies by completing four courses and earning 15-16 COMM or J credits. For more information and specific requirements, please see the Focus Award section of the catalog.

COMPUTER AIDED DESIGN AND DRAFTING (CADD)

CAREER AND PROGRAM DESCRIPTION

This program is designed to assist students in acquiring the knowledge and skills required of drafters and designers. 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. Modern CAD (computer aided drafting) labs provide the opportunity for CAD skill development using a variety of CAD software. The program and courses are developed with the advice and support of an advisory committee.

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

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.

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.

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

COMPUTER AIDED DESIGN AND DRAFTING CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>DRF</th>
<th>42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Credits</td>
<td>42</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADD 100</td>
<td>Drafting Orientation</td>
</tr>
<tr>
<td>CADD 160</td>
<td>Drafting Fundamentals</td>
</tr>
<tr>
<td>CADD 126</td>
<td>Introduction to AutoCAD</td>
</tr>
<tr>
<td>CADD 136</td>
<td>Intermediate AutoCAD</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>CADD 165</td>
<td>Intermediate Drafting</td>
</tr>
<tr>
<td>CADD 175</td>
<td>SolidWorks Fundamentals</td>
</tr>
<tr>
<td>CADD 185</td>
<td>Inventor Fundamentals</td>
</tr>
<tr>
<td>CADD 246</td>
<td>AutoCAD 3-D and Solid Modeling</td>
</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>CADD 255</td>
<td>Kinematics Drafting</td>
</tr>
<tr>
<td>CADD 256</td>
<td>Advanced AutoCAD</td>
</tr>
<tr>
<td>CADD 265</td>
<td>Advanced Drafting</td>
</tr>
<tr>
<td>CADD 275</td>
<td>SolidWorks Advanced</td>
</tr>
<tr>
<td>CADD 285</td>
<td>Advanced Inventor</td>
</tr>
<tr>
<td>Total Credits</td>
<td>42</td>
</tr>
</tbody>
</table>

COMPUTER APPLICATIONS AND OFFICE SYSTEMS
Cascade Campus
MAHB, Room 202
971-722-5316

Rock Creek Campus
Building 2, Room 210
971-722-7770

Southeast Campus
Student Commons Room 214
971-722-6031 or 971-722-6146

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

PORTLAND COMMUNITY COLLEGE ■ 2014-2015
and e-commerce applications, as well as incorporating multimedia techniques into websites with audio and video applications.

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

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

All students are advised to consult with a program advisor on their selection of electives.

Administrative Assistant Certificate: Intended to meet business career needs for entry-level administrative assistants, secretaries, receptionists, file clerks, and data entry personnel. Workers in these positions may perform a wide variety of duties such as working with office technology to produce and file business documents, greeting the public, planning and scheduling, accounting, and creating web pages.

The Website Development and Design Certificate: Intended to meet business career needs for entry-level positions that assist website developers, HTML programmers, web designers, web producers, and web technologists. Certificate completers will be able to create functional websites and assist in the production of professional dynamic websites. Administrative support personnel and entrepreneurs will gain the necessary skills to develop and manage departmental and personal websites.

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

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Computer Applications/Office Systems: Administrative Assistant
Administrative Office Professional
Website Development and Design

ONE-YEAR CERTIFICATE

Administrative Assistant
Website Development and Design

LESS THAN ONE-YEAR CERTIFICATE

Virtual Assistant

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

Basic Computer Literacy
Word Processing
Spreadsheet
Office Assistant
Web Assistant I
Web Assistant II

PREREQUISITES AND REQUIREMENTS

All CAS/OS courses applied to degrees and certificates within the CAS/OS program must be passed with a “C” or better.

ASSOCIATE OF APPLIED SCIENCE DEGREE

Administrative Assistant (p. 66)
**ADMINISTRATIVE ASSISTANT DEGREE ELECTIVES**

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

**ADMINISTRATIVE OFFICE PROFESSIONAL AAS DEGREE**

Minimum 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. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

**ADMINISTRATIVE OFFICE PROFESSIONAL DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>27</td>
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<tr>
<td>BA</td>
<td>27</td>
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<tr>
<td>OS</td>
<td>17</td>
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<td>WR</td>
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</tr>
<tr>
<td>General Education</td>
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</tr>
<tr>
<td>Total Credits</td>
<td>91</td>
</tr>
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</table>

**ADMINISTRATIVE OFFICE PROFESSIONAL DEGREE COURSES**

- BA 101 Introduction to Business 4
- BA 111 Introduction to Accounting § 3
- BA 205 Business Communication Using Technology 4
- BA 206 Management Fundamentals 3
- BA 224 Human Resource Management 4
- BA 226 Business Law I 3
- BA 228 Computer Accounting Applications 3
- BA 285 Human Relations-Organizations 3
- CAS 111D Beginning Website Creation: Dreamweaver 3
- CAS 111E Beginning Website Creation: Expression Web 3
- CAS 118W CMS Website Creation: WordPress 3
- CAS 122 Keyboarding for Speed and Accuracy 4
- CAS 133 Basic Computer Skills/Microsoft Office 3
- CAS 170 Beginning Excel 3
- CAS 171 Intermediate Excel 4
- CAS 216 Beginning Word 3
- CAS 217 Intermediate Word 3
- CAS 246 Integrated Computer Projects 4
- OS 131 10-key on Calculators 1
- OS 220 Business Editing Skills 4
- OS 240 Filing and Records Management 4
- OS 245 Office Systems and Procedures 3
- OS 280F Cooperative Education: Administrative Assistant 3
- OS 280G Cooperative Education: Administrative Assistant 4
- WR 121 English Composition 4
| Total Credits | 91 |

§ Course cannot be substituted for another course.

**WEBSITE DEVELOPMENT AND DESIGN AAS DEGREE**

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**WEBSITE DEVELOPMENT AND DESIGN DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tr>
<td>CAS</td>
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<tr>
<td>BA</td>
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<tr>
<td>BA/CIS</td>
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</tr>
<tr>
<td>BA/MM/WR</td>
<td>3</td>
</tr>
<tr>
<td>CAS/CIS</td>
<td>8</td>
</tr>
<tr>
<td>CIS</td>
<td>8</td>
</tr>
<tr>
<td>MM</td>
<td>3</td>
</tr>
<tr>
<td>MSD</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Website Develop and Design Electives</td>
<td>12</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>Total Credits</td>
<td>96</td>
</tr>
</tbody>
</table>

**WEBSITE DEVELOPMENT AND DESIGN DEGREE COURSES**

- BA 101 Introduction to Business 4
- Choose one of the following: 3
  - BA 205 Business Communication Using Technology
  - MM 270 Writing for Multimedia
  - WR 227 Technical and Professional Writing 1
  - BA 207 Introduction to E-Commerce
- or BA 243 E-ssentials of E-Commerce Information Systems 4
- or BA 233 Principles of Marketing 3
- CAS 101 Introduction to Website Development & Design 1
- CAS 110 Introduction to Web Graphics 1
- CAS 111D Beginning Website Creation: Dreamweaver 3
- CAS 175E Intro Web Animation 3
- CAS 180 Search Engine Optimization-SEO 3
- Choose one of the following: 3
  - CAS 181J CMS Website Creation: Joomla 1
  - CAS 181D CMS Website Creation: Drupal 4
  - CAS 181W CMS Website Creation: WordPress 4
  - CAS 206 Principles of HTML 4
  - CAS 213 JavaScript and JQuery for Designers 4
  - or CIS 133W JavaScript for Web Developers 4
  - CAS 215 Cascading Style Sheets - CSS 4
  - CAS 222 Intermediate Website Creation 3
  - CAS 225 PHP and MySQL for Designers 4
  - or CIS 195P PHP Web Development I 4
  - CAS 242 Web Workflow and Mockups 3
  - CAS 280W Cooperative Education: Web Site Development 4
  - CAS 285 Capstone for Website Development/Design 3
  - CIS 121 Computer Concepts II 4
## PROGRAMS & DISCIPLINES

**PORTLAND COMMUNITY COLLEGE**  
2014-2015

<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>MM 110</td>
<td>Introduction to Multimedia</td>
<td>4</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
</tr>
<tr>
<td>MSD 279</td>
<td>Project Management - Intro</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Website Development and Design Electives</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>96</td>
<td></td>
</tr>
</tbody>
</table>

* Could be used as General Education

### WEBSITE DEVELOPMENT AND DESIGN ELECTIVES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 115</td>
<td>Basic Design - 2D Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 116</td>
<td>Basic Design - Color Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 140A</td>
<td>Digital Photography I</td>
<td>3</td>
</tr>
<tr>
<td>BA 255</td>
<td>Project Management - Business Environments</td>
<td>4</td>
</tr>
<tr>
<td>CAS 111E</td>
<td>Beginning Website Creation: Expression Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 118/208</td>
<td>Beginning Photoshop</td>
<td>3</td>
</tr>
<tr>
<td>CAS 140</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS 175F/175</td>
<td>Introduction to Animation: Flash</td>
<td>3</td>
</tr>
<tr>
<td>CAS 181D</td>
<td>CMS Website Creation: Drupal</td>
<td>3</td>
</tr>
<tr>
<td>CAS 181J</td>
<td>CMS Website Creation: Joomla</td>
<td>3</td>
</tr>
<tr>
<td>CAS 181W</td>
<td>CMS Website Creation: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>CAS 214</td>
<td>Beginning ColdFusion/CFML</td>
<td>3</td>
</tr>
<tr>
<td>CAS 220</td>
<td>Project Management - Beginning MS Project</td>
<td>3</td>
</tr>
<tr>
<td>CAS 275</td>
<td>Intermediate Flash</td>
<td>3</td>
</tr>
<tr>
<td>CAS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 125D</td>
<td>Database Application Development I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 133B</td>
<td>Introduction to Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CAS 133J</td>
<td>Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 133W</td>
<td>JavaScript for Web Developers</td>
<td>4</td>
</tr>
<tr>
<td>CAS 135M</td>
<td>Mobile Application Programming</td>
<td>4</td>
</tr>
<tr>
<td>CAS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 187I</td>
<td>Web Technical Administration</td>
<td>4</td>
</tr>
<tr>
<td>CAS 195P</td>
<td>PHP Web Development I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 233B</td>
<td>Intermediate Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CAS 233J</td>
<td>Java Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CAS 234B</td>
<td>Advanced Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CAS 234J</td>
<td>Java Programming III</td>
<td>4</td>
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<tr>
<td>CAS 233W</td>
<td>JavaScript for Web Developers</td>
<td>4</td>
</tr>
<tr>
<td>CAS 235W</td>
<td>Introduction to Web Analytics</td>
<td>4</td>
</tr>
<tr>
<td>CAS 245</td>
<td>Project Management - Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>CAS 275</td>
<td>Data Modeling and SQL Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CAS 276</td>
<td>Advanced SQL</td>
<td>4</td>
</tr>
<tr>
<td>CAS 287I</td>
<td>Web Server Administration</td>
<td>4</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>
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</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
</tr>
<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
<td>3</td>
</tr>
<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>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 236</td>
<td>Video Compression and Streaming on the Internet</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 245</td>
<td>Internet Delivery Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

* Could be used as General Education.

### ONE-YEAR CERTIFICATE

Administrative Assistant (p. 68)  
Website Development and Design (p. 69)

### LESS THAN ONE-YEAR CERTIFICATE

Virtual Assistant (p. 70)

### LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

Basic Computer Literacy (p. 70)  
Word Processing (p. 70)  
Spreadsheet (p. 70)  
Office Assistant (p. 70)  
Web Assistant I (p. 70)  
Web Assistant II (p. 71)

### ADMINISTRATIVE ASSISTANT ONE-YEAR CERTIFICATE

Minimum 52 credits. Students must meet certificate requirements.

### ADMINISTRATIVE ASSISTANT CERTIFICATE CREDIT SUMMARY

- **CAS** 13  
- **BA** 10  
- **OS** 13  
- **MTH** 4  
- **WR** 4  
- **CAS/Admin Asst Certificate Elective** 4  
- **General Education** 4  
- **Total Credits** 52

### ADMINISTRATIVE ASSISTANT CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 123</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office (or Administrative Assistant Certificate Elective Course)</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>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
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<tr>
<td>MTH 30</td>
<td>Business Mathematics</td>
<td>4</td>
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<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
<td>1</td>
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<tr>
<td>OS 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>OS 240</td>
<td>Filing and Records Management</td>
<td>4</td>
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<tr>
<td>OS 245</td>
<td>Office Systems and Procedures</td>
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</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>
General Education 4
Total Credits 52

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

WEBSITE DEVELOPMENT AND DESIGN ONE-YEAR CERTIFICATE
59 minimum credits. Students must meet certificate requirements.

WEBSITE DEVELOPMENT AND DESIGN CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAS</td>
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<td>BA</td>
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</tr>
<tr>
<td>BA/CIS</td>
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</tr>
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<td>BA/MM/WR</td>
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<td>CAS/CIS</td>
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<td>CIS</td>
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<tr>
<td>MM</td>
<td>3</td>
</tr>
<tr>
<td>Website Development and Design Certificate Electives</td>
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</tr>
<tr>
<td>Total Credits</td>
<td>59</td>
</tr>
</tbody>
</table>

WEBSITE DEVELOPMENT AND DESIGN CERTIFICATE COURSES

Choose one of the following:

| BA 205 | Business Communication Using Technology |
| BA 207 | Technical and Professional Writing 1 |
| BA 208 | E-ssentials of E-Commerce Information Systems |
| BA 223 | Principles of Marketing |
| CAS 101 | Introduction to Website Development & Design |
| CAS 110 | Introduction to Web Graphics |
| CAS 111D | Beginning Website Creation: Dreamweaver |
| CAS 175E | Intro Web Animation |
| CAS 180 | Search Engine Optimization-SEO |

Choose one of the following:

| CAS 181D | CMS Website Creation: Drupal |
| CAS 181J | CMS Website Creation: Joomla |
| CAS 181W | CMS Website Creation: WordPress |
| CAS 214 | Beginning ColdFusion/CFML |
| CAS 220 | Project Management - Beginning MS Project |
| CAS 225 | PHP and MySQL for Designers |
| CAS 275 | Intermediate Flash |
| CIS 122 | Software Design |
| CIS 120 | Computer Concepts I |
| CIS 125D | Database Application Development I |
| CIS 133B | Introduction to Visual Basic.NET Programming |
| CIS 133J | Java Programming I |
| CIS 133M | Mobile Application Programming |
| CIS 179 | Data Communication Concepts I |
| CIS 187I | Web Technical Administration |
| CIS 195P | PHP Web Development I |
| CIS 233B | Intermediate Visual Basic.NET Programming |
| CIS 233J | Java Programming II |
| CIS 233W | Advanced Visual Basic.NET Programming |
| CIS 234B | Java Programming III |
| CIS 234J | Introduction to Web Analytics |
| CIS 235W | Project Management - Information Systems |
| CIS 245 | Data Modeling and SQL Introduction |
| CIS 275 | Advanced SQL |
| CIS 276 | Web Server Administration |
| CIS 287I | Multimedia Graphic Video and Audio Production |
| MM 130 | Multimedia Authoring I |
| MM 140 | Marketing Yourself as a Multimedia Professional |
| MM 160 | Multimedia Design II |
| MM 220 | Graphics for Multimedia |
| MM 230 | Vector Graphics & Animation for the World Wide Web |
| MM 231 | Digital Video Editing and Production |
| MM 235 | Video Compression and Streaming on the Internet |
| MM 236 | Multimedia Authoring II-Scripting |
| MM 240 |  |
### VIRTUAL ASSISTANT LESS THAN ONE YEAR CERTIFICATE

Minimum 26 credits. Students must meet all certificate requirements.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>Creating a Virtual Office</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>Virtual Office Concepts</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>Cooperative Education: Administrative</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>Credits</td>
<td>26</td>
</tr>
</tbody>
</table>

### COMPUTER APPLICATIONS AND OFFICE SYSTEMS CAREER PATHWAY CERTIFICATES

#### BASIC COMPUTER LITERACY: CAREER PATHWAY CERTIFICATE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>Credits</td>
<td>13</td>
</tr>
</tbody>
</table>

#### WORD PROCESSING: CAREER PATHWAY CERTIFICATE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Publisher</td>
<td>3</td>
</tr>
<tr>
<td>OS</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>Credits</td>
<td>26</td>
</tr>
</tbody>
</table>

### SPREADSHEET: CAREER PATHWAY CERTIFICATE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>or CAS</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>OS</td>
<td>Business Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>10-key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>WR</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>Credits</td>
<td>27</td>
</tr>
</tbody>
</table>

### OFFICE ASSISTANT: CAREER PATHWAY CERTIFICATE

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA</td>
<td>Business Communication Using Technology</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CAS</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>or CAS</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>Filing and Records Management</td>
<td>4</td>
</tr>
<tr>
<td>OS</td>
<td>Office Systems and Procedures</td>
<td>4</td>
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<tr>
<td>OS</td>
<td>Cooperative Education: Administrative</td>
<td>2</td>
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<tr>
<td>WR</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Administrative Assistant Degree Electives</td>
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</tr>
<tr>
<td>Total</td>
<td>Credits</td>
<td>43</td>
</tr>
</tbody>
</table>

### WEB ASSISTANT I: CAREER PATHWAY CERTIFICATE

Minimum 13 credits. The Web Assistant I Certificate is a Career Pathway. All courses are contained in the Website Development and Design AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Introduction to Website Development &amp; Design</td>
<td>1</td>
</tr>
<tr>
<td>CAS</td>
<td>Introduction to Web Graphics</td>
<td>1</td>
</tr>
<tr>
<td>CAS</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS</td>
<td>Principles of HTML</td>
<td>4</td>
</tr>
<tr>
<td>CAS</td>
<td>Cascading Style Sheets - CSS</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>Credits</td>
<td>13</td>
</tr>
</tbody>
</table>
WEB ASSISTANT II: CAREER PATHWAY
CERTIFICATE
Minimum 23 credits. The Web Assistant II Certificate is a Career Pathway. All courses are contained in the Website Development and Design AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 101</td>
<td>Introduction to Website Development &amp; Design</td>
<td>1</td>
</tr>
<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics</td>
<td>1</td>
</tr>
<tr>
<td>CAS 11D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 180</td>
<td>Search Engine Optimization-SEO</td>
<td>3</td>
</tr>
<tr>
<td>Choose one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS 181D</td>
<td>CMS Website Creation: Drupal</td>
<td>3</td>
</tr>
<tr>
<td>CAS 181J</td>
<td>CMS Website Creation: Joomla</td>
<td>3</td>
</tr>
<tr>
<td>CAS 181W</td>
<td>CMS Website Creation: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of HTML</td>
<td>4</td>
</tr>
<tr>
<td>CAS 215</td>
<td>Cascading Style Sheets - CSS</td>
<td>4</td>
</tr>
<tr>
<td>CAS 222</td>
<td>Intermediate Website Creation</td>
<td>3</td>
</tr>
<tr>
<td>CAS 280W</td>
<td>Cooperative Education: Web Site Development</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits 23

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

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

Computer Information Systems AAS Degree: This degree prepares students for computer information systems related careers. Students will take classes in the CIS Department that include software analysis, design, programming (in two or more languages), database modeling, Windows or Unix operating systems, data communications and an extensive selection of electives. Emphasis is on developing enduring skills and knowledge, rather than on training students to use specific tools and applications that may be "fashionable," but that have not established a foothold in industry.

Computer Information Systems: 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.

Health Informatics AAS Degree: This limited entry degree prepares students for health informatics related careers. Students will take classes in the CIS Department that include software analysis, design, programming, database modeling, Windows and Unix operating systems, and an extensive selection of electives. Students must meet with an advisor prior to entry in degree program. Students will also take classes from the BA and HIM departments.

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.

Computer Information Systems: E-Commerce One-Year Certificate: This certificate prepares students for careers in Internet based commerce including web server administrator, webmaster, E-Commerce manager, help desk/user support specialist, web technologist and web developer. Specialists in these positions, with both a business and technical perspective, will be able to resolve multi tier E-Commerce issues involving connectivity, security and scalability.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Computer Information Systems

ONE-YEAR CERTIFICATE
Computer Information Systems
Computer Information Systems: E-Commerce

LESS THAN ONE-YEAR CERTIFICATE: CAREER PATHWAY
Computer Information Systems: E-Commerce One-Year Certificate:

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

PREREQUISITES AND REQUIREMENTS
Computer Information Systems AAS: In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 95. Students must satisfactorily complete all courses with a CIS prefix in the degree with a grade of C or better.

Computer Information Systems: Network Administration AAS Degree: In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 95. Students must satisfactorily complete all courses with a CIS prefix in the degree with a grade of C or better.

Health Informatics AAS Degree: In order to follow the recommended sequence of courses, students should be ready to enter WR 121 and MTH 95. Students should also complete CAS 133 or CIS 120 or have basic computer skills in Windows Operating System and Microsoft Word, Excel, Powerpoint and Access prior to taking any HIM or CIS course. Note: Criminal background checks and drug tests are required in most health care industry jobs, including health informatics. Students must satisfactorily complete all courses with a CIS prefix in the degree with a grade of C or better.

Computer Information Systems One-Year Certificate: 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. Students must satisfactorily complete all courses with a CIS prefix in the degree with a grade of C or better.
Computer Information Systems: E-Commerce One-Year Certificate:
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 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. Students must satisfactorily complete all courses with a CIS
prefix in the degree with a grade of C or better.

ASSOCIATE OF APPLIED SCIENCE DEGREE

Computer Information Systems (p. 72)
Computer Information Systems: Network Administration Option (p. 73)
Health Informatics (p. 74)

COMPUTER INFORMATION SYSTEMS AAS
DEGREE

Minimum 94 credits. Students must also meet Associate Degree
Comprehensive Requirements and Associate of Applied Science
Requirements. Students must complete a total of sixteen credits of
General Education. Some courses specified within the program may
be used as General Education. In addition to required courses in
the program of study, students must satisfy MTH 65 competency.
Students should consult with program advisors for course planning.

COMPUTER INFORMATION SYSTEMS DEGREE
CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS</td>
<td>32</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>CIS Program Electives</td>
<td>36</td>
</tr>
<tr>
<td>CIS Programming Electives</td>
<td>8</td>
</tr>
<tr>
<td>CIS Program Business Electives</td>
<td>6</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>94</strong></td>
</tr>
</tbody>
</table>

COMPUTER INFORMATION SYSTEMS DEGREE
COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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 122</td>
<td>Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 140M</td>
<td>Operating Systems I: Microsoft</td>
<td>4</td>
</tr>
<tr>
<td>or CS 140U</td>
<td>Introduction to UNIX</td>
<td>4</td>
</tr>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR 122</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>or WR 227</td>
<td>Technical and Professional Writing 1</td>
<td>4</td>
</tr>
<tr>
<td>CIS Program Electives 1</td>
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<tr>
<td>CIS Programming Electives 2</td>
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<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>CIS Program Business Electives (see list below) *</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>94</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

COMPUTER INFORMATION SYSTEMS PROGRAM
ELECTIVES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 215</td>
<td>Cascading Style Sheets - CSS</td>
<td>4</td>
</tr>
<tr>
<td>CIS 125D</td>
<td>Database Application Development I</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 133W</td>
<td>JavaScript for Web Developers</td>
<td>4</td>
</tr>
<tr>
<td>CIS 135A</td>
<td>Application Development with Agile/Scrum</td>
<td>4</td>
</tr>
<tr>
<td>CIS 135M</td>
<td>Mobile Application Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 135T</td>
<td>XML and HL7</td>
<td>4</td>
</tr>
<tr>
<td>CIS 140M</td>
<td>Operating Systems I: Microsoft</td>
<td>4</td>
</tr>
<tr>
<td>CIS 140S</td>
<td>Perl Script Programming</td>
<td>1</td>
</tr>
<tr>
<td>CIS 145</td>
<td>Microcomputer Hardware and Troubleshooting</td>
<td>4</td>
</tr>
<tr>
<td>CIS 178</td>
<td>Applied Internet Concepts</td>
<td>4</td>
</tr>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 187I</td>
<td>Web Technical Administration</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 195P</td>
<td>PHP Web Development I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 225</td>
<td>End User Support</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233B</td>
<td>Intermediate Visual Basic.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233J</td>
<td>Java Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233S</td>
<td>Internet Web Page Scripting</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233W</td>
<td>JavaScript for Web Developers</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 234N</td>
<td>C# Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234S</td>
<td>Web Application Development Using.NET</td>
<td>4</td>
</tr>
<tr>
<td>CIS 235W</td>
<td>Introduction to Web Analytics</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 243</td>
<td>Essentials of E-Commerce Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CIS 245</td>
<td>Project Management - Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS 246</td>
<td>Structured Systems Design</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>CIS 277D</td>
<td>Database Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 277O</td>
<td>Advanced Database Concepts in Oracle</td>
<td>4</td>
</tr>
<tr>
<td>CIS 277T</td>
<td>Web Business Intelligence Application Development</td>
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<td>CIS 278</td>
<td>Data Communication Concepts II</td>
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<td>CIS 279L</td>
<td>Linux Network Administration</td>
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<tr>
<td>CIS 280D</td>
<td>Cooperative Education: Application</td>
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<td>CIS 284</td>
<td>Network Security</td>
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<td>CIS 286</td>
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PROGRAMS & DISCIPLINES

SUMMARY

NETWORK ADMINISTRATION DEGREE CREDIT

Students should consult with program advisors for course planning. In addition to required courses in General Education, some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy the MTH 65 competency. Students must complete a total of sixteen credits of Comprehensive Requirements and Associate of Applied Science Minimum 94 credits. Students must also meet Associate Degree

NETWORK ADMINISTRATION AAS DEGREE

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy the MTH 65 competency. Students should consult with program advisors for course planning.

NETWORK ADMINISTRATION DEGREE CREDIT SUMMARY

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NETWORK ADMINISTRATION DEGREE COURSES

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<td>CIS 279L</td>
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<td>CS 140U</td>
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<td>WR 121</td>
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COMPUTER INFORMATION SYSTEMS PROGRAMMING ELECTIVES

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<td>CIS 233B</td>
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<td>CIS 133J</td>
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COMPUTER INFORMATION SYSTEMS PROGRAM BUSINESS ELECTIVES

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COMPUTER INFORMATION SYSTEMS NETWORK ADMINISTRATION DEGREE ELECTIVES

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<td>CIS 188</td>
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<td>CIS 225</td>
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<td>CIS 286</td>
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COMPUTER INFORMATION SYSTEMS PROGRAM BUSINESS ELECTIVES

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<tr>
<td>BA 206</td>
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</table>

* Could be used as General Education.
1 A 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.

ECONOMIC ISSUES

<table>
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<td>EC 203</td>
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* Could be used as General Education.
1 Network Administration Electives - 28 credit total, 20 credits must be at the 200 level.
HEALTH INFORMATICS DEGREE CREDIT

Students should consult with program advisors for course planning. In addition to required courses in General Education, some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

HEALTH INFORMATICS DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
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<td>BA 212</td>
<td>Principles of Accounting II</td>
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<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
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</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>BA 226</td>
<td>Business Law I</td>
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<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
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<td>EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
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<tr>
<td>EC 203</td>
<td>Principles of Economics: Applications to Economic Issues</td>
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*Could be used as General Education.

COMPUTER INFORMATION SYSTEMS

PROGRAMMING ELECTIVES 1

<table>
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<tr>
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<th>Course Title</th>
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<tr>
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<td>Computer Science I and Computer Science II</td>
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<tr>
<td>CIS 133B &amp; CIS 233B</td>
<td>Introduction to Visual Basic.NET Programming and Intermediate Visual Basic.NET Programming</td>
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<tr>
<td>CIS 133J &amp; CIS 233J</td>
<td>Java Programming I and Java Programming II</td>
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1Students enrolled in the Network Administration AAS Degree are required to take one course for 4 credits from the six courses listed in the CIS Programming Elective lists.

HEALTH INFORMATICS AAS DEGREE

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

HEALTH INFORMATICS DEGREE CREDIT

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>BA 211</td>
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<td>BA 212</td>
<td>Principles of Accounting II</td>
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<td>BA 223</td>
<td>Principles of Marketing</td>
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<td>Principles of Economics: Applications to Economic Issues</td>
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HEALTH INFORMATICS DEGREE COURSES

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<tr>
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<td>Principles of Accounting I</td>
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<td>CIS 125D</td>
<td>Database Application Development I</td>
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<td>CIS 140M</td>
<td>Operating Systems I: Microsoft</td>
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<tr>
<td>or CS 140U</td>
<td>Introduction to UNIX</td>
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<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
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<td>Systems Analysis</td>
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<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
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<td>Health Record Content 1</td>
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BEGINNING PROGRAMMING ELECTIVES

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<tr>
<td>CIS 133B</td>
<td>Introduction to Visual Basic.NET Programming</td>
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<td>CIS 133J</td>
<td>Java Programming I</td>
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INTERMEDIATE PROGRAMMING ELECTIVES

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<td>Java Programming II</td>
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<td>CS 162</td>
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HEALTH INFORMATICS DEGREE ELECTIVES

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<td>BA 255</td>
<td>Project Management - Business Environments</td>
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<td>BI 112</td>
<td>Cell Biology for Health Occupations</td>
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<td>Introduction to Human Anatomy &amp; Physiology I</td>
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<td>Introduction to Human Anatomy &amp; Physiology II</td>
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<td>Human Anatomy &amp; Physiology I</td>
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<td>Human Anatomy &amp; Physiology III</td>
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<td>CIS 145</td>
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<td>CIS 189</td>
<td>Wireless Security</td>
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<tr>
<td>CIS 225</td>
<td>End User Support</td>
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<td>CIS 240L</td>
<td>Linux Installation and Configuration</td>
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<td>Managing a Windows Server Environment</td>
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<td>Database Security</td>
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<td>Advanced Database Concepts in Oracle</td>
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<td>Web Business Intelligence Application</td>
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<td>CIS 278</td>
<td>Data Communication Concepts II</td>
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CERTIFICATE COURSES

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<td>WR 227</td>
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Choose one of the following:
- CIS Program Electives (see list below)
- CADD 126 Introduction to AutoCAD

CERTIFICATE CREDIT SUMMARY

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<tr>
<td>Total Credits</td>
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</table>

* Could be used as General Education

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

**ONE-YEAR CERTIFICATE**

Computer Information Systems (p. 75)
Computer Information Systems: E-Commerce (p. 76)

**LESS THAN ONE-YEAR CERTIFICATE: CAREER PATHWAY**

Windows Network Security (p. 77)
Linux/Unix Network Security (p. 77)
Network Administration (p. 77)
Microsoft Server Administration (p. 77)
Linux Server Administration (p. 77)
Web Application Development (p. 77)
Oracle and SQL (p. 77)
Java Application Programming (p. 77)
Database Design and SQL (p. 78)
VB.Net Application Programming (p. 78)

**COMPUTER INFORMATION SYSTEMS ONE-YEAR CERTIFICATE**

Minimum 46 credits. Students must meet all certificate requirements.

**COMPUTER INFORMATION SYSTEMS CERTIFICATE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CIS</td>
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<td>WR</td>
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**COMPUTER INFORMATION SYSTEMS CERTIFICATE COURSES**

<table>
<thead>
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<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Computer Concepts II</td>
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</tr>
<tr>
<td>CIS 122</td>
<td>Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 140M</td>
<td>Operating Systems I: Microsoft</td>
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</tr>
<tr>
<td>or CS 140U</td>
<td>Introduction to UNIX</td>
<td>4</td>
</tr>
<tr>
<td>PSY 201A</td>
<td>Introduction to Psychology - Part 1</td>
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</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
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</tr>
<tr>
<td>WR 122</td>
<td>English Composition</td>
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<tr>
<td>or WR 227</td>
<td>Technical and Professional Writing 1</td>
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<tr>
<td>CADD 126</td>
<td>Introduction to AutoCAD</td>
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**COMPUTER INFORMATION SYSTEMS PROGRAM ELECTIVES**

<table>
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<td>CAS 215</td>
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<tr>
<td>CIS 125D</td>
<td>Database Application Development I</td>
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<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 133W</td>
<td>JavaScript for Web Developers</td>
<td>4</td>
</tr>
<tr>
<td>CIS 135A</td>
<td>Application Development with Agile/Scrum</td>
<td>4</td>
</tr>
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<td>CIS 135M</td>
<td>Mobile Application Programming</td>
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<tr>
<td>CIS 135T</td>
<td>XML and HL7</td>
<td>4</td>
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<td>CIS 140M</td>
<td>Operating Systems I: Microsoft</td>
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<tr>
<td>CIS 140S</td>
<td>Perl Script Programming</td>
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<td>CIS 145</td>
<td>Microcomputer Hardware and Troubleshooting</td>
<td>4</td>
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<tr>
<td>CIS 178</td>
<td>Applied Internet Concepts</td>
<td>4</td>
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<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
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<td>CIS 187I</td>
<td>Web Technical Administration</td>
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<tr>
<td>CIS 188</td>
<td>Introduction to Wireless Networking</td>
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<td>CIS 189</td>
<td>Wireless Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 195P</td>
<td>PHP Web Development I</td>
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<tr>
<td>CIS 225</td>
<td>End User Support</td>
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</tr>
<tr>
<td>CIS 233B</td>
<td>Intermediate Visual Basic.NET Programming</td>
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<td>CIS 233J</td>
<td>Java Programming II</td>
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<tr>
<td>CIS 233S</td>
<td>Internet Web Page Scripting</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233W</td>
<td>JavaScript for Web Developers II</td>
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</tr>
<tr>
<td>CIS 234B</td>
<td>Advanced Visual Basic.NET Programming</td>
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<td>CIS 234J</td>
<td>Java Programming III</td>
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<td>CIS 234N</td>
<td>C# Programming</td>
<td>4</td>
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<tr>
<td>CIS 234S</td>
<td>Web Application Development Using.NET</td>
<td>4</td>
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<tr>
<td>CIS 235W</td>
<td>Introduction to Web Analytics</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>
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</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-Commerce Information</td>
<td>4</td>
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<tr>
<td>CIS 244</td>
<td>Systems Analysis</td>
<td>4</td>
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<tr>
<td>CIS 245</td>
<td>Project Management - Information Systems</td>
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<tr>
<td>CIS 246</td>
<td>Structured Systems Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
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<tr>
<td>CIS 276</td>
<td>Advanced SQL</td>
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<td>Database Security</td>
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<tr>
<td>CIS 277O</td>
<td>Advanced Database Concepts in Oracle</td>
<td>4</td>
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<td>CIS 277T</td>
<td>Web Business Intelligence Application</td>
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<tr>
<td>CIS 278</td>
<td>Web Business Intelligence Application</td>
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<tr>
<td>CIS 279L</td>
<td>Data Communication Concepts II</td>
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<tr>
<td>CIS 280D</td>
<td>Linux Network Administration</td>
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<tr>
<td>CIS 284</td>
<td>Cooperative Education: Application</td>
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<tr>
<td>CIS 286</td>
<td>Network Security</td>
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</tbody>
</table>

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

- **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
- **CIS 295R**  Introduction to Ruby Language and Applications  4
- **CS 133U**  C Programming  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**  Computing Environments 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**  Managerial Accounting  4
- **BA 223**  Principles of Marketing  3
- **BA 226**  Business Law I  4
- **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

### E-COMMERCE ONE-YEAR CERTIFICATE

Minimum 48 credits. Students must meet all certificate requirements.

### E-COMMERCE CERTIFICATE CREDIT SUMMARY

#### TRACK A DESIGN AND DEVELOPMENT

- **CIS**  17
- **PSY**  4
- **WR**  4
- **Track A Electives**  20
- **CIS E-Com Business Electives**  3

**Total Credits** 48

### E-COMMERCE TRACK A COURSES

- **CIS 225**  End User Support  4
- **CIS 243**  E-ssentials of E-Commerce Information Systems  4
- **CIS 244**  Systems Analysis  4
- **CIS 275**  Data Modeling and SQL Introduction  4
- **CIS 280D**  Cooperative Education: Application Development  4
- **PSY 201A**  Introduction to Psychology - Part 1  4
- **WR 227**  Technical and Professional Writing 1  4

**Total Credits** 48

### TRACK B ADMINISTRATION

- **CIS**  17
- **PSY**  4
- **WR**  4
- **Track B Electives**  20
- **E-Com Business Electives**  3

**Total Credits** 48

### CIS: E-COMMERCE TRACK B COURSES

- **CIS 225**  End User Support  4
- **CIS 243**  E-ssentials of E-Commerce Information Systems  4
- **CIS 244**  Systems Analysis  4
- **CIS 275**  Data Modeling and SQL Introduction  4
- **CIS 280D**  Cooperative Education: Application Development  4
- **PSY 201A**  Introduction to Psychology - Part 1  4
- **WR 227**  Technical and Professional Writing 1  4
- **E-Commerce Business Electives**  3
- **Track B Administration Electives**  20

**Total Credits** 48

### TRACK B: ADMINISTRATION ELECTIVES

- **CIS 225**  PHP and MySQL for Designers  4
- **CIS 275**  Intermediate Flash  3
- **CIS 179**  Data Communication Concepts I  4
- **CIS 240L**  Linux Installation and Configuration  4
### COMPUTER INFORMATION SYSTEMS:
#### LESS THAN ONE-YEAR CAREER PATHWAY CERTIFICATES

#### WINDOWS NETWORK SECURITY: CAREER PATHWAY CERTIFICATE
Minimum 36 credits. The Windows Network Security Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CIS 140M</td>
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<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>
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<td>CIS 286</td>
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<td>CIS 287M</td>
<td>Microsoft Server Security</td>
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<td>CIS 288M</td>
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</table>

#### LINUX/UNIX SERVER NETWORK SECURITY: CAREER PATHWAY CERTIFICATE
Minimum 28 credits. The Linux/Unix Server Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degree.

<table>
<thead>
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<th>Course Title</th>
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<td>CIS 179</td>
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<tr>
<td>CIS 240L</td>
<td>Linux Installation and Configuration</td>
<td>4</td>
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<tr>
<td>CIS 279L</td>
<td>Linux Network Administration</td>
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<td>CS 140U</td>
<td>Introduction to UNIX</td>
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<tr>
<td>Total Credits</td>
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#### NETWORK ADMINISTRATION: CAREER PATHWAY CERTIFICATE
Minimum 16 credits. The Network Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degree.

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

#### MICROSOFT SERVER ADMINISTRATION: CAREER PATHWAY CERTIFICATE
Minimum 24 credits. The Microsoft Server Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degrees.

<table>
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<th>Course Code</th>
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<td>CIS 240M</td>
<td>Managing a Windows Server Environment</td>
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<td>CIS 287M</td>
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<td>CIS 288M</td>
<td>Microsoft Network Administration</td>
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<td>CIS 289M</td>
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#### LINUX SERVER ADMINISTRATION: CAREER PATHWAY CERTIFICATE
Minimum 16 credits. The Linux Server Administration Certificate is a Career Pathway. All courses are contained in the Network Administration AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
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<tr>
<td>CIS 240L</td>
<td>Linux Installation and Configuration</td>
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<tr>
<td>CIS 279L</td>
<td>Linux Network Administration</td>
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<tr>
<td>CS 140U</td>
<td>Introduction to UNIX</td>
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<tr>
<td>Total Credits</td>
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</tbody>
</table>

#### WEB APPLICATION DEVELOPMENT: CAREER PATHWAY CERTIFICATE
Minimum 16 credits. The Web Application Development Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
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<td>CIS 233S</td>
<td>Internet Web Page Scripting</td>
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<td>CIS 234S</td>
<td>Web Application Development Using.NET</td>
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<tr>
<td>CIS 295P</td>
<td>PHP Web Development II</td>
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<td>Total Credits</td>
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<td>16</td>
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</table>

#### ORACLE AND SQL: CAREER PATHWAY CERTIFICATE
Minimum 12 credits. The Oracle and SQL Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

<table>
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<tr>
<th>Course Code</th>
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<tr>
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<td>Advanced SQL</td>
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<td>CIS 277O</td>
<td>Advanced Database Concepts in Oracle</td>
<td>4</td>
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<td>CIS 277T</td>
<td>Web Business Intelligence Application Development</td>
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<tr>
<td>Total Credits</td>
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</table>

#### JAVA APPLICATION PROGRAMMING: CAREER PATHWAY CERTIFICATE
Minimum 16 credits. The Java Application Programming Certificate is a Career Pathway. All courses are contained in the Computer Information Systems AAS Degree.

<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>
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</tr>
<tr>
<td>CIS 234J</td>
<td>Java Programming III</td>
<td>4</td>
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<tr>
<td>Total Credits</td>
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</tbody>
</table>
DATABASE DESIGN AND SQL: CAREER PATHWAY CERTIFICATE

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

- CIS 125D: Database Application Development I 4
- CIS 275: Data Modeling and SQL Introduction 4
- CIS 276: Advanced SQL 4

Total Credits 12

VB.NET APPLICATION PROGRAMMING: CAREER PATHWAY CERTIFICATE

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

- CIS 122: Software Design 4
- CIS 133B: Introduction to Visual Basic.NET Programming 4
- CIS 233B: Intermediate Visual Basic.NET Programming 4
- CIS 234B: Advanced Visual Basic.NET Programming 4

Total Credits 16

COMPUTER SCIENCE

Rock Creek Campus
Building 2, Room 244
971-722-7331 or 971-722-7604

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

www.pcc.edu/cs

DESCRIPTION

Computer science is the study of information systems, their representation, architecture, and implementation, used for a variety of practical and theoretical purposes. Computer science addresses methods by which data is accessed, stored, and retrieved, which include areas such as representational computation, programming languages, algorithmic modeling, and software design, testing and development. Computer scientists apply their knowledge of mathematics, physics, and logic to solve a variety of problems using diverse technology.

Students learn practical methods of reasoning, problem-solving, and theoretical analysis to develop their skills in computer science. While exploring general courses in programming, systems analysis, mathematics, and physics, students apply their skills to core challenges within the field. PCC offers students the opportunity to earn an Associate of Arts Oregon Transfer (AAOT) degree. Students may also complete courses as preparation for a bachelor’s or advanced degree or update skills to industry standards. Students wishing to transfer credits must check the specific requirements of the college/university to which they intend to transfer. Transfer guides exist with Portland State University, Oregon State University, The University of Oregon and the Oregon Institute of Technology for the two-year associate degree.

CRIMINAL JUSTICE

Cascade Campus
Public Service Education Building (PSEB), Room 121
971-722-5629 or 971-722-5236

www.pcc.edu/cj

CAREER AND PROGRAM DESCRIPTION

Persons in the criminal justice field may work in a municipal, county, state or federal law enforcement organization or corrections system. Positions requiring law enforcement education are available at all levels of government and in private industry. Duties range from crime prevention programs to investigative and uniform patrols. Technical skills such as data processing and criminalistics are used to support overall criminal justice operations.

The Corrections Technician Certificate gives students the skills and knowledge needed for entry-level technical work in a correctional setting. This certificate identifies the first step in an educational pathway for the AAS degree in Criminal Justice. This certificate provides a credential to students who want to work in the field as they continue on their educational pathways. Most of the courses can be used for the AAS degree should the student choose to continue their education.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Criminal Justice

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

Corrections Technician Certificate

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.

CRIMINAL JUSTICE AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

CRIMINAL JUSTICE DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Subject</th>
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</thead>
<tbody>
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<tr>
<td>PS</td>
<td>4</td>
</tr>
<tr>
<td>SOC</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>8</td>
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<tr>
<td>CJA Degree Electives</td>
<td>12</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>8</td>
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<tr>
<td>Total Credits</td>
<td>92</td>
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</table>

CRIMINAL JUSTICE DEGREE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>CJA 100</td>
<td>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 the 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 and Seizure</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>------------</td>
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</tr>
<tr>
<td>CJA 211</td>
<td>Civil Liability and Ethics in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJA 212</td>
<td>Criminal Law</td>
<td>3</td>
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<tr>
<td>CJA 225</td>
<td>Criminal Justice and the United States Constitution</td>
<td>3</td>
</tr>
<tr>
<td>CJA 230</td>
<td>Police Report Writing</td>
<td>4</td>
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<tr>
<td>CJA 243</td>
<td>Narcotics and Dangerous Drugs</td>
<td>3</td>
</tr>
<tr>
<td>CJA 244</td>
<td>Tactical Communication in Crisis Incidents</td>
<td>3</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>3</td>
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Choose one of the following:
- PS 201 U.S. Government
- PS 202 U.S. Public Policy & Democracy
- PS 203 State and Local Government
- PSY 201A Introduction to Psychology - Part 1
- PSY 239 Introduction to Abnormal Psychology
- SOC 206 Social Problems
- or SOC 204 Sociology in Everyday Life
- WR 121 English Composition
- WR 227 Technical and Professional Writing

**CJA Degree Electives**

Total Credits: 92

* Could be used as General Education

**CRIMINAL JUSTICE DEGREE ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CJA 115</td>
<td>Introduction to Jail Operations</td>
<td>3</td>
</tr>
<tr>
<td>CJA 116</td>
<td>Juvenile Risk Assessment</td>
<td>3</td>
</tr>
<tr>
<td>CJA 117</td>
<td>Introduction to Homeland Security</td>
<td>3</td>
</tr>
<tr>
<td>CJA 213</td>
<td>Evidence</td>
<td>3</td>
</tr>
<tr>
<td>CJA 214</td>
<td>Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CJA 215</td>
<td>Forensic Science and Criminalistics</td>
<td>3</td>
</tr>
<tr>
<td>CJA 217</td>
<td>Interviewing and Interrogation</td>
<td>3</td>
</tr>
<tr>
<td>CJA 218</td>
<td>Criminal Justice Perspectives of Violence &amp; Aggression</td>
<td>3</td>
</tr>
<tr>
<td>CJA 228</td>
<td>Organized Crime and Terrorism</td>
<td>3</td>
</tr>
<tr>
<td>CJA 231</td>
<td>Crime Scene Photography</td>
<td>3</td>
</tr>
<tr>
<td>CJA 232</td>
<td>Intelligence Led Policing</td>
<td>3</td>
</tr>
<tr>
<td>CJA 233</td>
<td>Aspects of Homicide</td>
<td>3</td>
</tr>
<tr>
<td>CJA 234</td>
<td>Intelligence Analysis and Security Management</td>
<td>3</td>
</tr>
<tr>
<td>CJA 235</td>
<td>Transportation and Border Security</td>
<td>3</td>
</tr>
<tr>
<td>CJA 245</td>
<td>Search Warrant Preparation</td>
<td>3</td>
</tr>
<tr>
<td>CJA 246</td>
<td>Fish and Wildlife Enforcement</td>
<td>3</td>
</tr>
<tr>
<td>CJA 247</td>
<td>Introduction to Criminal Gangs</td>
<td>3</td>
</tr>
<tr>
<td>CJA 251</td>
<td>Management Strategies for Police Leaders</td>
<td>3</td>
</tr>
<tr>
<td>CJA 252</td>
<td>Innovative Police Leadership</td>
<td>3</td>
</tr>
<tr>
<td>CJA 253</td>
<td>Critical Thinking for Police Leaders</td>
<td>3</td>
</tr>
<tr>
<td>CJA 254</td>
<td>Leading Police Resilience</td>
<td>3</td>
</tr>
<tr>
<td>CJA 260</td>
<td>Introduction to Correctional Institutions</td>
<td>3</td>
</tr>
<tr>
<td>CJA 261</td>
<td>Introduction to Probation and Parole</td>
<td>3</td>
</tr>
<tr>
<td>CJA 262</td>
<td>Introduction to Correctional Treatment</td>
<td>3</td>
</tr>
<tr>
<td>CJA 263</td>
<td>Introduction to Corrections Casework</td>
<td>3</td>
</tr>
<tr>
<td>CJA 264</td>
<td>Introduction to Corrections Administration</td>
<td>3</td>
</tr>
<tr>
<td>CJA 265</td>
<td>Community Reentry for Offenders</td>
<td>3</td>
</tr>
<tr>
<td>CJA 280A</td>
<td>Cooperative Education: Criminal Justice</td>
<td>1-3</td>
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</table>
CULINARY ASSISTANT CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culinary Assistant</td>
<td>45</td>
</tr>
</tbody>
</table>

Total Credits: 45

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>Culinary Assistant</td>
<td>15</td>
</tr>
</tbody>
</table>

Second Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culinary Assistant</td>
<td>15</td>
</tr>
</tbody>
</table>

Third Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culinary Assistant</td>
<td>15</td>
</tr>
</tbody>
</table>

Total Credits: 45

DANCE
Cascade Campus
Terrell Hall (TH), Room 2200
971-722-5251

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

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

DESCRIPTION
PCC offers dance technique and theory courses designed to explore dance at the beginning through advanced levels. Courses emphasize correct alignment, principles of movement, development of individual dance skills, and an awareness and appreciation of dance as a performing art. The study of dance develops physical and mental discipline, expands cultural perspectives, enhances personal growth and enrichment, and supports lifelong learning. Dance performance opportunities for students include participation in informal showings, dance concerts and Dance Performance (D 209).

Most dance courses are offered concurrently and co-listed in both the Music and Dance Department and the Physical Education Department. Students may choose to take the courses for dance or PE credit, which may be applied to degree and/or transfer programs. Students may not sign up for dance and PE credit for the same class in the same term. Students should check transferability of specific dance courses with the institution to which they are planning to transfer.

Although a physical exam is not required for physical education and dance courses, students are advised to seek approval from their personal physician before entering into a regular program of vigorous physical activity as is found in physical education and dance courses. Students will be asked to complete personal data cards to hand into their instructors prior to the beginning of their classes. Personal data cards include any personal health information that could impact participation in class activities: diabetes, cardiac history, past or current injuries, etc. PCC does not provide medical coverage. All students are strongly encouraged to acquire medical coverage prior to taking a physical education, dance or any other physical activity class. Contact the Music and Dance Department, and the Physical Education and Fitness Department for additional information.

DEALER SERVICE TECHNOLOGY

CAREER AND PROGRAM DESCRIPTION
This program is a partnership between Portland Community College, Caterpillar Corp and the five Northwest Caterpillar dealerships. It is an industry specific two-year associate degree program with required on-the-job training/internships at a sponsoring Caterpillar dealership. It is designed to prepare individuals to become qualified Caterpillar service technicians. Students learn how to work on many types of Caterpillar equipment including agricultural, construction, forestry and earth moving equipment. The Dealer Service Technology Program combines technical and academic education with real world experience through paid on the job training. Students learn about engine fundamentals, machine hydraulics, fuel systems, electrical systems, transmissions, torque converters, undercarriage, final drives and more. During the four paid internships students have the opportunity to experience a future career firsthand through on-the-job training. Upon completion of the program students will earn an Associate of Applied Science Degree from Portland Community College.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Dealer Service Technology

PREREQUISITES AND REQUIREMENTS
Applicants must take the placement test administered through the testing center at PCC, or a center provided by their CAT dealer contact person. Prospective students must sign a release of information form to allow their CAT dealership access to their educational records and PCC the ability to share information with the dealership. To begin the program students must secure a paid CAT dealer 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 971-722-7465.

DEALER SERVICE TECHNOLOGY AAS DEGREE
Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

DEALER SERVICE TECHNOLOGY DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DST</td>
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<tr>
<td>WLD</td>
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<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
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</tbody>
</table>

Total Credits: 101

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.
Cement, place temporary restorations, place and remove matrix and restorations, fabricate and cement temporary crowns, remove also prepared to perform the following expanded duties: polish teeth educating patients on various dental procedures. Graduates are equipment, comforting patients during dental appointments and desensitizing agents, sterilizing instruments, disinfecting dental removing rubber dams, placing topical anesthetic, fluoride and materials to the dentist, taking impressions, preparing, placing and preparing treatment rooms, passing dental instruments and assisting the dentist and hygienist during clinical procedures. The dental assistant is a member of the dental team, working with and assisting the dentist and hygienist during clinical procedures. Traditional duties and responsibilities include: exposing and developing dental radiographs, mixing dental materials, organizing and preparing treatment rooms, passing dental instruments and materials to the dentist, taking impressions, preparing, placing and removing rubber dams, placing topical anesthetic, fluoride and desensitizing agents, sterilizing instruments, disinfecting dental equipment, comforting patients during dental appointments and educating patients on various dental procedures. Graduates are also prepared to perform the following expanded duties: polish teeth and restorations, fabricate and cement temporary crowns, remove cement, place temporary restorations, place and remove matrix.

**DENTAL ASSISTING**

Sylvania Campus  
Health Technology Building (HT), Room 206  
971-722-4236

Health Admissions Office  
Health Technology Building (HT), Room 205  
971-722-4795 
www.pcc.edu/da

**CAREER AND PROGRAM DESCRIPTION**

The dental assistant is a member of the dental team, working with and assisting the dentist and hygienist during clinical procedures. Traditional duties and responsibilities include: exposing and developing dental radiographs, mixing dental materials, organizing and preparing treatment rooms, passing dental instruments and materials to the dentist, taking impressions, preparing, placing and removing rubber dams, placing topical anesthetic, fluoride and desensitizing agents, sterilizing instruments, disinfecting dental equipment, comforting patients during dental appointments and educating patients on various dental procedures. Graduates are also prepared to perform the following expanded duties: polish teeth and restorations, fabricate and cement temporary crowns, remove cement, place temporary restorations, place and remove matrix.

**DEGREES AND CERTIFICATES OFFERED**

**ONE-YEAR CERTIFICATE**

Dental Assisting

Accredited by the Commission on Dental Accreditation (CODA).

**PREREQUISITES AND REQUIREMENTS**

All aspects of the Dental Assisting Program are continually assessed to provide ongoing excellence and continuing improvement, and are subject to change.

1. High school diploma 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.
   c. Placement into MTH 20 or higher.
   d. Approved college level Psychology course. PSY 101 is recommended.

3. 12 hours of shadowing in a dental office or clinic facility that is documented by dentist signature on office letterhead.

Applicants should have all courses and job shadowing complete by the end of winter term. Courses planned for spring term may not be considered. Pass/No Pass grades are 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.

- 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). Test must be within previous 12 months. Positive TST will require evidence of normal chest x-ray (supply upon acceptance).
- A Valid (Current) Healthcare Provider CPR that includes Adult, Child, Infant and AED is required.

**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 blood borne pathogens and infectious disease are available to applicants upon request. Upon acceptance to the program, extensive training in this area will occur.

Applicants who have an infectious disease or who are carriers of an infectious disease should seek counsel from their physician and the program director prior to application. The college follows CDC suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health care settings, from the CDC’s Guidelines for Infection Control in Dental Healthcare Settings–2003 available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm, Table 1, attached to and incorporated by this reference to this policy.

**DENTAL ASSISTING ONE-YEAR CERTIFICATE**

Minimum 45 credits. Students must meet certificate requirements.

**DENTAL ASSISTING CERTIFICATE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Dental Assisting</th>
<th>Total Credits</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>45</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>Credits</th>
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</thead>
<tbody>
<tr>
<td>DA 110</td>
<td>Clinical Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>DA 111</td>
<td>Clinical Procedures I (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>DA 116</td>
<td>Introduction to Dental Assisting</td>
<td>2</td>
</tr>
<tr>
<td>DA 120</td>
<td>Dental Radiology I</td>
<td>2</td>
</tr>
<tr>
<td>DA 121</td>
<td>Dental Radiology I (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>DA 130</td>
<td>Dental Materials I</td>
<td>1</td>
</tr>
<tr>
<td>DA 131</td>
<td>Dental Materials I (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>DA 140A</td>
<td>Integrated Basic Science I</td>
<td>2</td>
</tr>
<tr>
<td>DA 140B</td>
<td>Integrated Basic Science II</td>
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### Second Term

<table>
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<th>Course Code</th>
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<tr>
<td>DA 112</td>
<td>Clinical Procedures II</td>
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<tr>
<td>DA 113</td>
<td>Clinical Procedures II (Lab)</td>
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<tr>
<td>DA 118</td>
<td>Expanded Duties I</td>
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<tr>
<td>DA 122</td>
<td>Dental Radiology II</td>
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**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DA 114</td>
<td>Clinical Procedures III</td>
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<tr>
<td>DA 115</td>
<td>Clinical Procedures Lab III</td>
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<tr>
<td>DA 119</td>
<td>Expanded Duties II</td>
<td>1</td>
</tr>
<tr>
<td>DA 125</td>
<td>Dental Radiology III (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>DA 135</td>
<td>Dental Materials III (Lab)</td>
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</tr>
<tr>
<td>DA 152</td>
<td>Dental Office Procedures II</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credits:** 45

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**DENTAL HYGIENE**

Sylvania Campus
Health Technology Building (HT), Room 206
971-722-4236

Health Admissions Office
Health Technology Building (HT), Room 205
971-722-4795

www.pcc.edu/dh

**CAREER AND PROGRAM DESCRIPTION**

The dental hygienist is a licensed dental health care professional who specializes in periodontal therapy and oral health education. A broad-based education in biological sciences and humanities as well as dental sciences and clinical techniques prepares the graduate for work in private practice and community settings. In the dental office, the hygienist assesses the patient’s oral health, treats periodontal (gum) disease and provides follow-up care. In addition, the hygienist provides a variety of preventive services including the application of fluoride and sealants, tobacco and nutritional counseling and oral health education to individuals and community groups.

The Dental Hygiene Program offers a two-year curriculum that is accredited by the Commission on Dental Accreditation (CODA). The program of study prepares students for the National Board written examination and regional licensure examinations.

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 blood borne pathogens and Infectious Disease are available to applicants upon request. Upon acceptance to the program, extensive training in this area will occur.

Applicants who have an infectious disease or who are carriers of an infectious disease should seek counsel from their physician and the program director prior to application. The college follows CDC suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health care settings, from the CDC’s Guidelines for Infection Control in Dental Healthcare Settings–2003 available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm, Table 1, attached to and incorporated by this reference to this policy.
All PCC students enrolled in a health care or child care program, including dental hygiene, with requirements for practical experience of field training may have to pass a Criminal History Check (CHC) as a condition of their acceptance into a medical or other facility for training.

Students who do not pass the CHC may not be eligible to complete training at affiliated practicum sites, to sit for licensing or certification exams, obtain state licensure, 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.

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, communications, sociology and psychology.

Applications are accepted each year from January 1 to April 15 only. Twenty students and twelve alternates will be selected based upon specific admissions criteria. Further information can be obtained from the Dental Sciences Department or the Health Admissions Office:

Health Admissions Office
Sylvania Campus, (HT) Room 205
Portland Community College
P.O. Box 19000
Portland, Oregon 97280-0990

For additional help call 971-722-4795 or check the website www.pcc.edu/dh.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Dental Hygiene

PREREQUISITES AND REQUIREMENTS

Completion of the following courses or their equivalents* with a C or higher are required to be considered for application to the Dental Hygiene Program:

1. WR 121
2. MTH 65 or higher
3. BI 231 and BI 232 sequence with lab. Students planning to transfer dental hygiene course work to a university baccalaureate degree should take BI 231, BI 232, BI 233 and CH 104, CH 105, CH 106
4. BI 234 with lab (completed within the last seven years)
5. CH 102 or CH 106. These courses are required for entry into the program and may be used to fulfill the AAS General Education requirement.
6. PSY 101
7. SOC 204
8. COMM 111

All prerequisite course must be complete by the end of winter term prior to the application deadline. Courses planned for spring term will not be considered. Pass/No Pass grade is not acceptable in the prerequisite courses.

The Dental Hygiene Program is a limited entry program with restricted enrollment. The admissions process is competitive and based on a point system. Applicants with the highest point totals will be accepted. Completing admission requirements and applying to the programs does not guarantee admission. For our current point evaluation sheet please visit www.pcc.edu/dh. Candidates will be notified of their admissions status by the beginning of June.

- 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). Test must be within previous twelve months. Positive TST will require evidence of normal chest x-ray (supply upon acceptance).
- Valid CPR for the Healthcare Provider Card

DENTAL HYGIENE AAS DEGREE

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

DENTAL HYGIENE DEGREE CREDIT SUMMARY

| DH | 88 |
| TN | 4 |
| General Education | 16 |
| Total Credits | 108 |

COURSE OF STUDY

The following is a general example of a course of study. Students should consult with a program advisor for course planning.

First Term

| DH 101 | Dental Hygiene Theory I | 4 |
| DH 104 | Dental Hygiene Practice I | 3 |
| DH 113 | Dental Anatomy | 2 |
| DH 113L | Dental Anatomy (Lab) | 1 |
| DH 121 | Oral Health Education and Promotion | 1 |
| DH 127 | Medical Emergencies | 2 |
| General Education | 4 |

Second Term

| DH 102 | Dental Hygiene Theory II | 2 |
| DH 105 | Dental Hygiene Practice II | 3 |
| DH 110 | Cariology | 2 |
| DH 128 | Oral Histology | 2 |
| DH 228 | Head and Neck Anatomy | 2 |
| DH 236 | Ethics & Jurisprudence | 1 |
| DH 230 | Dental Materials | 2 |
| General Education | 4 |

Third Term

| DH 103 | Dental Hygiene Theory III | 2 |
| DH 106 | Dental Hygiene Practice III | 3 |
| DH 109 | Dental Radiology I | 2 |
| DH 109L | Dental Radiology I (Lab) | 1 |
| DH 129 | Oral Pathology | 3 |
| DH 240 | Intro to Dh Restorative Dentistry | 2 |
| DH 246 | Pharmacology | 3 |
| General Education | 4 |

Fourth Term

| DH 210 | Dental Radiology Lab II | 1 |
| DH 241 | DH Restorative Dentistry I | 4 |
| DH 242 | DH Restorative Dentistry II | 4 |
| FN 225 | Nutrition | 4 |
| or FN 270 | | |
| General Education | 4 |

Fifth Term

| DH 201 | Dental Hygiene Theory IV | 2 |
| DH 204 | Dental Hygiene Practice IV | 5 |
PROGRAMS & DISCIPLINES

PORTLAND COMMUNITY COLLEGE  ■  2014-2015

or DH 204A & DH 204B Dental Hygiene Practice IV and Dental Hygiene Practice IV
DH 208 Community Oral Health I 2
DH 229 Local Anesthesia 2
DH 243 DH Restorative Dentistry III 1
DH 260 Periodontology I 2
Sixth Term
DH 202 Dental Hygiene Theory V 3
DH 205 Dental Hygiene Practice V 5
DH 244 DH Restorative Dentistry IV 1
DH 250 Research Methods and Issues in Oral Health 1
DH 252 Community Oral Health II 2
Seventh Term
DH 203 Dental Hygiene Theory VI 2
DH 206 Dental Hygiene Practice VI 5
DH 245 DH Restorative Dentistry V 1
DH 253 Community Oral Health III 2

Total Credits: 108

* Could be used as General Education
1 Recommended General Education: COMM 111, PSY 101, SOC 204
2 DH 204 and DH 204A are only offered in the summer (fourth) term.

OPTIONAL DENTAL HYGIENE COURSES
Students should consult with program advisor for assistance with planning electives.

DH 100 Special Dental Hygiene Practice 1-5
DH 232 Nitrous Oxide Sedation 2

DENTAL LABORATORY TECHNOLOGY

Sylvania Campus
Health Technology Building (HT), Room 206
971-722-4236

Health Admissions Office
Health Technology Building (HT), Room 205
971-722-4795

www.pcc.edu/dlt

CAREER AND PROGRAM DESCRIPTION

The dental laboratory technologist is a professional member of the dental team and is considered the “artist” of that group. Using an order from a dentist, the technician designs and fabricates dental replacements such as crowns, bridges, dentures and orthodontic appliances. In the process, the technician carves complex structures and designs in wax, casts and finishes a variety of metals, and duplicates tooth form and color in acrylic resin or porcelain materials.

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.

PCC offers a two-year program that is accredited by the Commission on Dental Accreditation (CODA). 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 www.pcc.edu/dlt and should be submitted to:

Health Admissions Office
Sylvania Campus, HT 205
Portland Community College
P.O. Box 19000
Portland, Oregon 97280-0990

For more information, call 971-722-4795

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Dental Laboratory Technology

TWO-YEAR CERTIFICATE
Dental Laboratory Technology

PREREQUISITES AND REQUIREMENTS

1. GED, high school graduation or minimum college GPA of 2.0. (Proof of completion/graduation/college transcript must be submitted in your application).
2. Completion of RD 90 or WR 115 with a C or better or college placement into RD 115.
4. Satisfactory performance of wax carving tests (prerequisite).
5. Students must show evidence of having begun or completed the immunization series for Hepatitis B.
6. Students must complete MTH 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.

DENTAL LABORATORY TECHNOLOGY AAS DEGREE
Minimum 95 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

DENTAL LABORATORY TECHNOLOGY DEGREE

CREDIT SUMMARY

<table>
<thead>
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<td>MTH</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
- **DT 101**: Dental Technology Lab I (6 credits)
- **DT 120**: Dental Anatomy (2 credits)
- **DT 151**: Science of Dental Materials I (2 credits)
- **DT 141**: Denture Techniques I (2 credits)
- **MTH 65**: Introductory Algebra - Second Term (4 credits)

**General Education**
- **HE 125**: First Aid & Industrial Safety (3 credits)

**Total Credits:** 23

### Second Term
- **DT 102**: Dental Technology Lab II (6 credits)
- **DT 142**: Denture Techniques II (2 credits)
- **DT 152**: Science of Dental Materials II (3 credits)
- **HE 125**: First Aid & Industrial Safety (3 credits)

**General Education**
- **HE 125**: First Aid & Industrial Safety (3 credits)

**Total Credits:** 18

### Third Term
- **DT 103**: Dental Technology Lab III (6 credits)
- **DT 271**: Partials, Immediate and Overdentures (2 credits)
- **Any COMM course on General Education list**: 4 credits

**DT Degree Electives**
- **DT 284**: Dental Specialties (2 credits)
- **DT 286**: DT Registered Graduate Preparation (1 credit)
- **DT 287**: Introduction to CAD/CAM Technology and Dental Implant System (3 credits)

**Total Credits:** 15

### Fourth Term
- **DT 204**: Dental Technology Lab IV (6 credits)
- **DT 253**: Science of Dental Materials III (2 credits)
- **DT 260**: Inlay Casting, Crown and Bridge (3 credits)
- **DT 275**: Dental Laboratory Management (2 credits)

**General Education**
- **LS 242**: Stress and Human Health (4 credits)
- **PSY 240**: Personal Awareness and Growth * (4 credits)
- **SOC 231**: Sociology of Health & Aging * (4 credits)

**DENTAL LABORATORY TECHNOLOGY TWO-YEAR CERTIFICATE**
Minimum 79 credits. Students must meet all certificate requirements.

**DENTAL LABORATORY TECHNOLOGY CERTIFICATE CREDIT SUMMARY**

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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
- **DT 101**: Dental Technology Lab I (6 credits)
- **DT 120**: Dental Anatomy (2 credits)
- **DT 151**: Science of Dental Materials I (2 credits)
- **DT 141**: Denture Techniques I (2 credits)
- **MTH 20**: Basic Math (Arithmetic) (4 credits)

#### Second Term
- **DT 102**: Dental Technology Lab II (6 credits)
- **DT 142**: Denture Techniques II (2 credits)
- **DT 152**: Science of Dental Materials II (3 credits)
- **HE 125**: First Aid & Industrial Safety (3 credits)
- **Any COMM course on General Education list**: 4 credits

#### Third Term
- **DT 103**: Dental Technology Lab III (6 credits)
- **DT 271**: Partials, Immediate and Overdentures (2 credits)
- **Any COMM course on General Education list**: 4 credits

#### Fourth Term
- **DT 204**: Dental Technology Lab IV (6 credits)
- **DT 253**: Science of Dental Materials III (2 credits)
- **DT 260**: Inlay Casting, Crown and Bridge (3 credits)
- **DT 275**: Dental Laboratory Management (2 credits)

#### Fifth Term
- **DT 205**: Dental Technology Lab V (6 credits)
- **DT 254**: Science of Dental Materials IV (2 credits)
- **DT 276**: Dental Laboratory Management Lab (1 credit)
- **DT 272**: Dental Ceramics (3 credits)

#### Sixth Term
- **DT 206A**: Dental Technology Lab VI (Fabrication Ortho Appliances) (3 credits)
- **DT 206B**: Dental Technology Lab VII (CAD/CAM and Implant Restorations) (3 credits)
- **DT 284**: Dental Specialties (2 credits)
- **DT 286**: DT Registered Graduate Preparation (1 credit)
- **DT 287**: Introduction to CAD/CAM Technology and Dental Implant System (3 credits)

**Total Credits:** 79

### DENTAL LABORATORY TECHNOLOGY DEGREE ELECTIVES

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<td>BA 101 : Introduction to Business</td>
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<tr>
<td>BA 226 : Business Law I</td>
<td>4</td>
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<td>EC 200 : Principles of Economics: Microeconomics *</td>
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<td>EC 201 : Principles of Economics: Microeconomics *</td>
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</tr>
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<td>EC 216 : Labor Markets: Economics of Gender, Race, and Work *</td>
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<td>ESR 172 : Environmental Science: Chemical Perspectives *</td>
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<td>FN 225 : Nutrition</td>
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<td>HE 242 : Stress and Human Health</td>
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<td>PSY 240 : Personal Awareness and Growth *</td>
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<td>SOC 231 : Sociology of Health &amp; Aging *</td>
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**Total Credits:** 79

### DIESEL SERVICE TECHNOLOGY

**Rock Creek Campus**
- **Building 2, Room 117 - Shop**
- **Building 2, Room 230 - Office**
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.

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
A C grade or higher must be earned in every DS course to receive credit for that course towards a DS degree or certificate.

For the degree:
1. Completion of RD 80 or higher or equivalent placement test score.
2. Completion of MTH 20 or higher or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam.
3. ASE (Automotive Service Excellence) Student Certification testing is required upon completion of core classes.

For the certificate programs:
1. Completion of RD 80 or higher or equivalent placement test score.
2. Completion of MTH 20 or higher or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam.
3. Exit requirement: Completion of WR 80 or higher or equivalent placement test score. Exit requirement can be taken before or while taking the diesel courses.
4. ASE (Automotive Service Excellence) Student Certification testing is required upon completion of core classes.

DIESEL SERVICE TECHNOLOGY AAS DEGREE
Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

DIESEL SERVICE TECHNOLOGY DEGREE CREDIT SUMMARY

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DIESEL SERVICE TECHNOLOGY COURSES

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<td>DS 101</td>
<td>Diesel Engine Rebuild and Lab Procedures</td>
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<td>Truck Power Train</td>
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<tr>
<td>DS 103</td>
<td>Fuel Injection Systems</td>
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<td>DS 104</td>
<td>Fundamentals of Electricity &amp; Electronics</td>
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</tr>
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<td>DS 105</td>
<td>Fundamentals of Hydraulics &amp; Air Conditioning Systems</td>
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<td>DS 106</td>
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<td>DS 202</td>
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<td>DS 203</td>
<td>Fuel Injection System Diagnostics &amp; Cat Elect Eng Controls</td>
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<td>Diesel Starting, Charging and Electrical Control Systems</td>
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<td>DS 205</td>
<td>Mobile and Hydrostatic Hydraulics</td>
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<td>DS 206</td>
<td>Medium/Heavy Duty Truck Brake, Suspension &amp; Steering</td>
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<td>WLD 217</td>
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TWO-YEAR CERTIFICATE
Diesel Service Technology (p. 86)

LESS THAN ONE-YEAR CERTIFICATE
Diesel Service Technology (p. 87)

DIESEL SERVICE TECHNOLOGY TWO-YEAR CERTIFICATE
Minimum 76 credits. The Diesel Service Technology Two Year Certificate is a related certificate. All courses are contained in the Diesel Service Technology AAS Degree.

DIESEL SERVICE TECHNOLOGY CERTIFICATE CREDIT SUMMARY

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<th>Course</th>
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<td>CG</td>
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DIESEL SERVICE TECHNOLOGY CERTIFICATE COURSES

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<th>Course</th>
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<tr>
<td>CG 209</td>
<td>Job Finding Skills</td>
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<td>Diesel Engine Rebuild and Lab Procedures</td>
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<td>DS 104</td>
<td>Fundamentals of Electricity &amp; Electronics</td>
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<td>DS 105</td>
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<td>PMI/Detroit Diesel Electronic Control</td>
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PROFESSIONAL PROGRAMS & DISCIPLINES

DIESEL SERVICE TECHNOLOGY LESS THAN ONE-YEAR CERTIFICATE
Minimum 40 credits. The Diesel Service Technology Certificate is a related certificate. All courses are contained in the Diesel Service Technology AAS Degree.

DIESEL SERVICE TECHNOLOGY CERTIFICATE CREDIT SUMMARY

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DIESEL SERVICE TECHNOLOGY CERTIFICATE COURSES

- CG 209 Job Finding Skills
- WLD 217 Diesel Welding
- Diesel Service Technology Electives

ELECTIVES

- DS 101 Diesel Engine Rebuild and Lab Procedures
- DS 102 Truck Power Train
- DS 103 Fuel Injection Systems
- DS 104 Fundamentals of Electricity & Electronics
- DS 105 Fundamentals of Hydraulics & Air Conditioning Systems
- DS 106 PMI/Detroit Diesel Electronic Control
- DS 202 Heavy Duty Power Train
- DS 203 Fuel Injection System Diagnostics & Cat
- DS 204 Diesel Starting, Charging and Electrical Control Systems
- DS 205 Mobile and Hydrostatic Hydraulics
- DS 206 Medium/Heavy Duty Truck Brake, Suspension & Steering

Early Education and Family Studies

PORTLAND COMMUNITY COLLEGE  ■  2014-2015

Sylvania Campus
Health Technology Building (HT), Room 318
971-722-4217
For Spanish, please call 971-722-4853
www.pcc.edu/programs/early-ed/

CAREER PROGRAM AND DESCRIPTION

As a nationally accredited program, the Early Education and Family Studies (EEFS) program prepares teachers and home care providers of young children, ages birth through five, to plan environments, develop suitable learning experiences, and work closely with families in childhood care and education contexts. They also supervise play and physical needs of small children, organize daily activities, keep records of children’s progress, and confer with parents. Early education graduates may also work in related fields such as child care resource and referral.

The EEFS coursework is designed to meet the needs of the working student. All coursework for the Certificate and 85% of coursework for the AAS degree can be completed through a combination of courses offered online, in the evening, and on Saturdays.

Portland Community College’s early education articulation agreement with Portland State University allows for up to 100% of transfer credits toward PSU’s child and family studies degree or degree completion program.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE
Early Education and Family Studies

LESS THAN ONE-YEAR CERTIFICATE
Early Education and Family Studies

PREREQUISITES AND REQUIREMENTS

1. College placement test administered through assessment centers.
2. An initial advising/information session with an Early Education Program faculty advisor. Info session schedule available at the EEFS Office.
3. Students entering into the EEFS Program must demonstrate through transcripted record or by appropriate placement test scores the ability to be placed into WR 115 for certificate level course work and completion of WR 121 for AAS degree classes. MTH 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 130A, ECE 130B, ECE 130C, ECE 131A, ECE 131B, ECE 131C, ECE 133, ECE 134, ECE 135, ECE 260A, ECE 260B, ECE 264 and ECE 265. 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.

Admittance to practicum is based on previously completed coursework, availability, and department permission. 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) submit verification of Tdap vaccine; and 5) 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 (NAEYC) endorses this program and recommends it for students seeking a career in early childhood education.
Children’s (NAEYC) minimum suggested training for teachers in early childhood programs is also an AAS degree in EEFS. All required courses and competencies mastered for the certificate apply to the AAS degree.

Certificate classes may apply toward a CDA credential. CDA and Oregon Registry credentials may articulate into certificate level coursework.

**EARLY EDUCATION AND FAMILY STUDIES AAS DEGREE**

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**EARLY EDUCATION AND FAMILY STUDIES DEGREE CREDIT SUMMARY**

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**EARLY EDUCATION AND FAMILY STUDIES DEGREE COURSES**

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**EARLY EDUCATION AND FAMILY STUDIES DEGREE ELECTIVES**

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<td>MTH 211</td>
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<td>PSY 222</td>
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<tr>
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</table>
ECONOMICS

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 and EC 202. Students are recommended to take EC 201 first. PCC also offers other economics courses, see the course section for individual courses and course prerequisites.

EDUCATION

Cascade Campus
Technology Education Building (TEB), Room 209
971-722-5191, 971-722-5229 or 971-722-5430
www.pcc.edu/ed

CAREER AND PROGRAM DESCRIPTION

PCC’s Education Department offers a Paraeducator Degree and Certificate, Library 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 Assistant Certificate prepares graduates to qualify for jobs in K-12 school libraries, public libraries, academic libraries, and special libraries. Employment opportunities exist throughout the state and greater metropolitan area. The library assistant works in all aspects of library operations, including technical processing of materials, circulation procedures, reference, cataloging, literature and literature promotion, technology uses, such as media development,
web publishing, database and spreadsheet maintenance, and communicating with and providing customer service to library users.

The Library Assistant Certificate offers students the ability to select from two options:

1. A less than one-year certificate program that develops skills used in K-12 school, public, academic, and special libraries. Two terms of practicum are included.
2. An Associate of General Studies Degree. Students take a combination of 45-60 credits from option one, plus 16 credits of General Education in order to complete the 90 credits necessary to receive an associate degree. Students completing the two-year option have varied experiences in the field of libraries. Each student’s program must be approved by the Education Department.

Education courses may also be applied to the 90 credits required for an Associate of General Studies Degree. See a program advisor for information about transferring to a four-year institution. Many classes will be available via distance learning during the year. Please refer to the quarterly schedule or contact education faculty for details.

Elementary Education transfer students are allowed to take up to 9 credits from the Education Department as general electives without being admitted into the program. Students will be expected to meet the same prerequisites 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 Assistant

PREREQUISITES AND REQUIREMENTS

Admission to the Paraeducator or Library Assistant Programs requires the submission of an application and an interview. Please contact an education faculty advisor for application materials and to set an appointment for an interview. As part of the application process, you may need to submit transcripts for previous college coursework to PCC Student Records. The program application should be completed prior to the interview for review by the Education Department faculty.

Students are required to demonstrate competencies in writing, reading, mathematics and computer literacy (students must complete WR 121 and CAS 133 or pass competencies). Students enrolled in the Library Assistant program are required to take LIB 101 prior to entry in program.

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. It is recommended that Library Assistant Certificate students take ED 113 near the start of their studies and take ED 265 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 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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

PARAEDUCATOR DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<td>ED 100</td>
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<td>ED 102</td>
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<td>ED 123</td>
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<td>ED 124</td>
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PARAEDUCATOR DEGREE COURSES

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<td>Introduction to Education for Paraeducators</td>
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<td>ED 102</td>
<td>Displays &amp; Graphics for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 123</td>
<td>Instructional Strategies: Reading</td>
<td>3</td>
</tr>
<tr>
<td>ED 124</td>
<td>Instructional Strategies: Mathematics/Science</td>
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<td>ED 131</td>
<td>Applied Learning Theory</td>
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<tr>
<td>ED 136</td>
<td>Learning with Technology</td>
<td>3</td>
</tr>
<tr>
<td>ED 217</td>
<td>Classroom Management</td>
<td>3</td>
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<tr>
<td>or ED 252</td>
<td>Behavior Management</td>
<td>3</td>
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<tr>
<td>ED 224</td>
<td>Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 251</td>
<td>Overview of Exceptional Learners</td>
<td>3</td>
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<tr>
<td>Choose two of the following:</td>
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<tr>
<td>ED 258</td>
<td>Multicultural Education: Principles</td>
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<tr>
<td>ED 259</td>
<td>Multicultural Education: Applications</td>
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<tr>
<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
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<tr>
<td>ED 263</td>
<td>Portfolio Development</td>
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<td>ED 270</td>
<td>Practicum I</td>
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<td>ED 271</td>
<td>Practicum II</td>
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<tr>
<td>Choose two of the following:</td>
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<tr>
<td>ED 269</td>
<td>Introduction to Teaching the Learning Disabled Student</td>
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<tr>
<td>ED 290</td>
<td>Sheltered Instruction for English Language Learners</td>
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<tr>
<td>ED 291</td>
<td>Bilingual and ESL Strategies</td>
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<tr>
<td>PSY 215</td>
<td>Human Development</td>
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WR 121  English Composition  4
Education Specialization Electives  9
Remaining General Education  12
Paraeducator General Education Program Electives 2  14
Total Credits  90

* Could be used as General Education
1  MTH 211 may be substituted
2  Any course from the General Education list. Must include a minimum of four credits from each category

**EDUCATION SPECIALIZATION ELECTIVES**

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<td>ED 104</td>
<td>Multimedia for Educators</td>
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<td>ED 109</td>
<td>Library Procedures</td>
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<td>Library Collection Development</td>
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<td>ED 112</td>
<td>Introduction to Children’s Literature</td>
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<td>ED 114</td>
<td>Library Reference Services</td>
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<td>Storytelling</td>
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<td>ED 116</td>
<td>Literature for Adolescence and Young Adults</td>
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<td>ED 161</td>
<td>Leadership Through Advocacy and Representation</td>
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<td>ED 162</td>
<td>Leadership Through Civic Engagement</td>
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<td>ED 163</td>
<td>Personal Leadership Development</td>
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<td>ED 171</td>
<td>Computers in Education II</td>
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<td>ED 206</td>
<td>Seminar: Advanced Education Techniques</td>
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<td>Classroom Management</td>
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<td>ED 218</td>
<td>Working with Paraeducators</td>
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<td>ED 252</td>
<td>Behavior Management</td>
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<td>ED 258</td>
<td>Multicultural Education: Principles</td>
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<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
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<td>ED 269</td>
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<td>ED 291</td>
<td>Bilingual and ESL Strategies</td>
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**ONE-YEAR CERTIFICATE**
Paraeducator (p. 91)

**LESS THAN ONE-YEAR CERTIFICATE**
Library Assistant (p. 91)

**PARAEDUCATOR ONE-YEAR CERTIFICATE**
Minimum 51 credits. Students must meet certificate requirements.

<table>
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<td>ED 102</td>
<td>Displays &amp; Graphics for Educators</td>
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<td>ED 124</td>
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<td>ED 217</td>
<td>Classroom Management</td>
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<td>ED 251</td>
<td>Overview of Exceptional Learners</td>
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<tr>
<td>ED 258</td>
<td>Multicultural Education: Principles</td>
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<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
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<td>ED 269</td>
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Total Credits  51

**LIBRARY ASSISTANT LESS THAN ONE-YEAR CERTIFICATE**
Minimum 44 credits hours. Students must meet certificate requirements.

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<td>ED 118</td>
<td>Customer Service &amp; Communication in Libraries</td>
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<td>ED 111</td>
<td>Library Collection Development</td>
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</tr>
<tr>
<td>ED 114</td>
<td>Library Reference Services</td>
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<td>ED 119</td>
<td>Library Access Services</td>
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<td>ED 122</td>
<td>Library Technical Services</td>
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<tr>
<td>ED 138</td>
<td>Library Cataloging and Classification</td>
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<td>ED 209</td>
<td>Library Practicum I</td>
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Total Credits  44
PROGRAMS & DISCIPLINES

PORTLAND COMMUNITY COLLEGE

2014-2015

ED 210   Library Practicum II
ED 265   Library Capstone Portfolio
Library Assistant Electives

Total Credits 44

LIBRARY ASSISTANT ELECTIVES
ED 136   Learning with Technology
ED 211   Library Practicum III
ED 230   Preservation of Library Materials
ED 232   Library Outreach to Diverse Communities
ED 235   Library Technology II
ED 238   Library Supervision and Management
ED 102   Displays & Graphics for Educators
ED 112   Introduction to Children’s Literature
ED 116   Literature for Adolescence and Young Adults
ED 260   Multicultural Literature for Children and Young Adults
ED 115   Storytelling
ED 224   Foundations of Education

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Electronic Engineering Technology
Electronic Engineering Technology: Biomedical Engineering Technology Option
Electronic Engineering Technology: Mechatronics/Automation/Robotics Engineering Technology Option
Electronic Engineering Technology: Renewable Energy Systems Option
Electronic Engineering Technology: Wireless and Data Communications Engineering Technology Option

ONE-YEAR CERTIFICATE
Electronic Engineering Technology

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Renewable Energy Systems

PREREQUISITES AND REQUIREMENTS
All students must have an advising interview with an EET advisor. Basic computer skills in the Windows operating system, word processing and spreadsheets are required. Prerequisites and requirements vary depending upon the degree or certificate.

Electronic Engineering Technology AAS Degree
1. Completion of WR 121
2. Placement into MTH 111 or higher

Biomedical Engineering Technology AAS Degree
1. Completion of WR 121
2. Placement into MTH 111 or higher
The following must be completed prior to beginning the second year.
3. Completion of any medical terminology course 3 credits or higher.
4. Completion of (BI 121 and BI 122) or (BI 231, BI 232, BI 233)

Mechatronics/Automation/Robotics Engineering Technology AAS degree
1. Completion of WR 121
2. Placement into MTH 111 or higher
3. Completion of CS 161

Renewable Energy Systems AAS Degree
1. Completion of WR 121
2. Placement into MTH 111 or higher

Wireless and Data Communications Engineering Technology AAS Degree
1. Completion of WR 121
2. Placement into MTH 111 or higher

Electronic Engineering Technology Certificate
1. Completion of WR 121
2. Placement into MTH 111 or higher

Renewable Energy Systems Certificate
1. Completion of WR 121
2. Placement into MTH 111 or higher

Full-time and Part-Time EET students: A day program starts in the fall and a late afternoon/evening program starts in the winter.

Students can transfer classes from the EET degree into any BSEET. The Electronic Engineering AAS and its options and certificates
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.

ASSOCIATE OF APPLIED SCIENCE DEGREE

Electronic Engineering Technology (p. 93)
Electronic Engineering Technology: Biomedical Engineering Technology Option (p. 93)
Electronic Engineering Technology: Mechatronics/Automation/Robotics Engineering Technology Option (p. 94)
Electronic Engineering Technology: Renewable Energy Systems Option (p. 95)
Electronic Engineering Technology: Wireless and Data Communications Engineering Technology Option (p. 95)

ELECTRONIC ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

ELECTRONIC ENGINEERING TECHNOLOGY AAS DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td>EET</td>
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<td>MTH</td>
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<td>Remaining General Education</td>
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</tr>
</tbody>
</table>

Total Credits: 101

Recommended General Education (p. 96)

BIOMEDICAL ENGINEERING TECHNOLOGY AAS DEGREE

Minimum 102 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with a program advisor for course planning.

BIOMEDICAL ENGINEERING TECHNOLOGY AAS DEGREE CREDIT SUMMARY

<table>
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Total Credits: 102

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>EET 121</td>
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<td>MTH 111</td>
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Second Term

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<tr>
<td>EET 188</td>
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<td>MTH 112</td>
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</table>

General Education

<table>
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<tr>
<th>Course</th>
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<td>EET 123</td>
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Fourth Term

<table>
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Fifth Term

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Sixth Term

<table>
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<tbody>
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<td>EET 273 Electronic Control Systems</td>
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<tr>
<td>EET 256 Capstone Project</td>
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<tr>
<td>or EET 280A Cooperative Education: Electronics Engineering Technology</td>
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</tr>
<tr>
<td>EET 272 Motors and Motor Controls</td>
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<tr>
<td>PHY 203 General Physics</td>
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</tbody>
</table>

Total Credits: 101

* Could be used as General Education

1. CS 161 may be substituted (required by OIT)
2. MTH 251 or MTH 252 may be substituted
3. PHY 211 may be substituted
4. PHY 212 may be substituted
5. PHY 213 may be substituted

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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<td>EET 111 Electrical Circuit Analysis I</td>
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<td>EET 121 Digital Systems 1</td>
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<tr>
<td>MTH 111 College Algebra</td>
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Second Term

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET 112 Electrical Circuit Analysis II</td>
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<td>EET 122 Digital Systems 2: Computing Systems</td>
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<td>EET 188 Industrial Safety</td>
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<td>MTH 112 Elementary Functions</td>
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General Education

<table>
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Fourth Term

<table>
<thead>
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<td>EET 113 Electrical Power</td>
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<tr>
<td>EET 123 Digital Systems 3: Mixed-Signal Systems</td>
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<tr>
<td>EET 178 Computing Environments for Technicians</td>
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</table>

Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET 222</td>
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<tr>
<td>EET 254 Seminar</td>
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<tr>
<td>PHY 202 General Physics</td>
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</tbody>
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Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EET 223 RF Communications Circuits</td>
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<td>EET 273 Electronic Control Systems</td>
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<tr>
<td>EET 256 Capstone Project</td>
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<tr>
<td>or EET 280A Cooperative Education: Electronics Engineering Technology</td>
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</tr>
<tr>
<td>EET 272 Motors and Motor Controls</td>
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<td>PHY 203 General Physics</td>
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Total Credits: 102

Recommended General Education (p. 96)
<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>EET 101</td>
<td>Introduction to Electronic Testing</td>
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<tr>
<td></td>
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<td>Equipment/Soldering/Tools</td>
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<tr>
<td></td>
<td>EET 111</td>
<td>Electrical Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MTH 111*</td>
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<td></td>
<td>PHYS 201*</td>
<td>General Physics</td>
<td>4</td>
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<tr>
<td>Second Term</td>
<td>EET 112</td>
<td>Electrical Circuit Analysis II</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>EET 122</td>
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<tr>
<td></td>
<td>PHYS 202*</td>
<td>General Physics</td>
<td>4</td>
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<tr>
<td>Third Term</td>
<td>CS 162*</td>
<td>Computer Science II</td>
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<td>EET 113</td>
<td>Electrical Power</td>
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<td></td>
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<td>Digital Systems 3: Mixed-Signal Systems</td>
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<td>MTH 112*</td>
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<td>EET 242</td>
<td>Microcontroller and Embedded Systems</td>
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<td>EET 260</td>
<td>Biomedical Equipment I</td>
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<tr>
<td></td>
<td>CS 175*</td>
<td>Introduction to AutoCAD</td>
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<td></td>
<td>MCH 158</td>
<td>Manufacturing Processes I</td>
<td>4</td>
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<tr>
<td></td>
<td>MT 101*</td>
<td>Introduction to Semiconductor Manufacturing</td>
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<td></td>
<td>MT 102*</td>
<td>Introduction to Semiconductor Devices</td>
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<td>ELT 225</td>
<td>Advanced Programmable Controllers, PC Based</td>
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<td></td>
<td>ELT 226</td>
<td>Intermediate Programmable Controllers (PC Based)</td>
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<td>EET 256</td>
<td>Capstone Project</td>
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<tr>
<td></td>
<td>or EET 280A</td>
<td>Cooperative Education: Electronics Engineering</td>
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<td>Technology</td>
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<tr>
<td></td>
<td>EET 272</td>
<td>Motors and Motor Controls</td>
<td>3</td>
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<tr>
<td></td>
<td>ELT 225</td>
<td>Advanced Programmable Controllers, PC Based</td>
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<tr>
<td></td>
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<td>Total Credits</td>
<td>108</td>
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</tbody>
</table>

**MECHATRONICS/AUTOMATION/ROBOTICS ENGINEERING TECHNOLOGY AAS DEGREE**

Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

**MECHATRONICS/AUTOMATION/ROBOTICS ENGINEERING TECHNOLOGY DEGREE CREDIT SUMMARY**

<table>
<thead>
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<td>MCH</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.

**Recommended General Education (p. 96)**

**MECHATRONICS/AUTOMATION/ROBOTICS ENGINEERING TECHNOLOGY (MARET) DEGREE ELECTIVES**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>CADD 126</td>
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<td>CADD 175</td>
<td>SolidWorks Fundamentals</td>
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<td>EET 178</td>
<td>Computing Environments for Technicians</td>
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<td>MCH 158</td>
<td>Project Machine Technology II</td>
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<td></td>
<td>Manufacturing</td>
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<tr>
<td>MT 102</td>
<td>Introduction to Semiconductor Devices</td>
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</tbody>
</table>
MT 104  Introduction to Solar Voltaic Processing  1
MT 122  Digital Systems II  3

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

Recommended General Education (p. 96)

RENEWABLE ENERGY SYSTEMS AAS DEGREE
Minimum 107 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

RENEWABLE ENERGY SYSTEMS DEGREE CREDIT SUMMARY

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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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Second Term
<table>
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<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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Third Term
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<th>Credits</th>
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Fourth Term
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<td>EET 242</td>
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Fifth Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 221</td>
<td>1</td>
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<tr>
<td>EET 241</td>
<td>1</td>
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<tr>
<td>ELT 125³</td>
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Sixth Term
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<td>CMET 213</td>
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<td>EET 254</td>
<td>1</td>
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<td>EET 272</td>
<td>3</td>
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<td>ELT 126</td>
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RENEWABLE ENERGY SYSTEMS PROGRAM ELECTIVES

<table>
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<th>Credits</th>
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<tbody>
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<tr>
<td>EET 256</td>
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<td>or EET 280A</td>
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<td>ELT 225</td>
<td>2</td>
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<table>
<thead>
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<th>Credits</th>
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<tbody>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>107</strong></td>
</tr>
</tbody>
</table>

¹ Could be used as General Education
² EET students are exempted from satisfying catalog prerequisites for this course. To register for EET 223, students must 1) successfully complete MTH 112 and PHY 202; and 2) obtain EET department advisor approval.
³ RET 122 of CGCC can be used as an elective
⁴ Recommended General Education (p. 96)

WIRELESS AND DATA COMMUNICATIONS ENGINEERING TECHNOLOGY AAS DEGREE
Minimum 99 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

WIRELESS AND DATA COMMUNICATIONS ENGINEERING TECHNOLOGY DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
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</tr>
<tr>
<td>CIS</td>
<td>16</td>
</tr>
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---

95
CS 4
MTH 15
Remaining General Education 6
Total Credits 96

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

First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>1</td>
<td>Introduction to Electronic Testing</td>
</tr>
<tr>
<td>EET 111</td>
<td>2</td>
<td>Electrical Circuit Analysis I</td>
</tr>
<tr>
<td>EET 121</td>
<td>3</td>
<td>Digital Systems 1</td>
</tr>
<tr>
<td>MTH 111</td>
<td>3</td>
<td>College Algebra</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
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</tr>
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</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 112</td>
<td>5</td>
<td>Electrical Circuit Analysis II</td>
</tr>
<tr>
<td>EET 122</td>
<td>5</td>
<td>Digital Systems 2: Computing Systems</td>
</tr>
<tr>
<td>EET 188</td>
<td>1</td>
<td>Industrial Safety</td>
</tr>
<tr>
<td>MTH 112</td>
<td>5</td>
<td>Elementary Functions</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>CS 133U1</td>
<td>4</td>
<td>C Programming</td>
</tr>
<tr>
<td>EET 113</td>
<td>5</td>
<td>Electrical Power</td>
</tr>
<tr>
<td>EET 123</td>
<td>4</td>
<td>Digital Systems 3: Mixed-Signal Systems</td>
</tr>
<tr>
<td>EET 178</td>
<td>5</td>
<td>Computing Environments for Technicians</td>
</tr>
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</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CIS 179</td>
<td>4</td>
<td>Data Communication Concepts I</td>
</tr>
<tr>
<td>EET 221</td>
<td>5</td>
<td>Semiconductor Devices and Circuits</td>
</tr>
<tr>
<td>EET 242</td>
<td>4</td>
<td>Microcontroller and Embedded Systems</td>
</tr>
<tr>
<td>MTH 2432</td>
<td>1</td>
<td>Statistics I</td>
</tr>
</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 188</td>
<td>4</td>
<td>Data Communication Concepts II</td>
</tr>
<tr>
<td>EET 222</td>
<td>5</td>
<td>Operational Amplifier Circuits</td>
</tr>
<tr>
<td>EET 241</td>
<td>4</td>
<td>Programming for Electronics</td>
</tr>
<tr>
<td>EET 254</td>
<td>1</td>
<td>Electronic Engineering Technology Seminar</td>
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<tr>
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Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 189</td>
<td>4</td>
<td>Wireless Security</td>
</tr>
<tr>
<td>CIS 278</td>
<td>4</td>
<td>Data Communication Concepts II</td>
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<tr>
<td>EET 223</td>
<td>5</td>
<td>RF Communications Circuits</td>
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<tr>
<td>EET 256</td>
<td>2</td>
<td>Capstone Project</td>
</tr>
<tr>
<td>or EET 280A</td>
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<td>Cooperative Education: Electronics Engineering Technology</td>
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<tr>
<td>General Education</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 99

1 Could be used as General Education
2 CS 161 may be substituted (required by OIT)
3 MTH 251 or MTH 252 may be substituted

RECOMMENDED GENERAL EDUCATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>COMM 111</td>
<td>4</td>
<td>Public Speaking</td>
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<tr>
<td>COMM 140</td>
<td>4</td>
<td>Introduction to Intercultural Communication</td>
</tr>
<tr>
<td>COMM 227</td>
<td>4</td>
<td>Nonverbal Communication</td>
</tr>
<tr>
<td>COMM 228</td>
<td>4</td>
<td>Mass Communication and Society</td>
</tr>
<tr>
<td>COMM 237</td>
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<td>Gender and Communication</td>
</tr>
<tr>
<td>PHL 202</td>
<td>4</td>
<td>Ethics</td>
</tr>
<tr>
<td>PHL 205</td>
<td>4</td>
<td>Contemporary Moral Problems: Biomedical Ethics</td>
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<tr>
<td>PHL 206</td>
<td>4</td>
<td>Introduction to Environmental Ethics</td>
</tr>
<tr>
<td>PHL 209</td>
<td>4</td>
<td>Business Ethics</td>
</tr>
<tr>
<td>PSY 101</td>
<td>4</td>
<td>Psychology and Human Relations</td>
</tr>
<tr>
<td>PSY 214</td>
<td>4</td>
<td>Introduction to Personality</td>
</tr>
<tr>
<td>PSY 215</td>
<td>4</td>
<td>Human Development</td>
</tr>
<tr>
<td>PSY 216</td>
<td>4</td>
<td>Social Psychology</td>
</tr>
<tr>
<td>PSY 240</td>
<td>4</td>
<td>Personal Awareness and Growth</td>
</tr>
<tr>
<td>SOC 205</td>
<td>4</td>
<td>Social Change in Societies</td>
</tr>
<tr>
<td>SOC 206</td>
<td>4</td>
<td>Social Problems</td>
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<tr>
<td>SOC 211</td>
<td>4</td>
<td>Peace and Conflict</td>
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<tr>
<td>SOC 213</td>
<td>4</td>
<td>Diversity in the United States</td>
</tr>
<tr>
<td>WR 222</td>
<td>4</td>
<td>Writing Research Papers</td>
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</tbody>
</table>

ONE-YEAR CERTIFICATE
Electronic Engineering Technology (p. 96)

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Renewable Energy Systems (p. 97)

ELECTRONIC ENGINEERING TECHNOLOGY ONE-YEAR CERTIFICATE
Minimum 49 credits. Students must meet certificate requirements. The Electronic Engineering Technology Certificate is a related certificate. All courses are contained in the Electronic Engineering Technology AAS Degree.

ELECTRONIC ENGINEERING TECHNOLOGY CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>EET</td>
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<tr>
<td>MTH</td>
<td>10</td>
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<tr>
<td>CS</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 49

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>
<th>Description</th>
</tr>
</thead>
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<td>3</td>
<td>College Algebra</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 112</td>
<td>5</td>
<td>Electrical Circuit Analysis II</td>
</tr>
<tr>
<td>EET 122</td>
<td>4</td>
<td>Digital Systems 2: Computing Systems</td>
</tr>
<tr>
<td>EET 188</td>
<td>1</td>
<td>Industrial Safety</td>
</tr>
<tr>
<td>MTH 112</td>
<td>5</td>
<td>Elementary Functions</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 133U1</td>
<td>4</td>
<td>C Programming</td>
</tr>
<tr>
<td>EET 113</td>
<td>5</td>
<td>Electrical Power</td>
</tr>
<tr>
<td>EET 123</td>
<td>4</td>
<td>Digital Systems 3: Mixed-Signal Systems</td>
</tr>
<tr>
<td>EET 178</td>
<td>4</td>
<td>Computing Environments for Technicians</td>
</tr>
</tbody>
</table>

Total Credits: 49
CS 161 may be substituted (required by OIT)
Course must be from the Social Science area.

RENEWABLE ENERGY SYSTEMS: CAREER PATHWAY CERTIFICATE
Minimum 42 credits. Students must meet certificate requirements. The Renewable Energy Systems Certificate is a Career Pathway. All courses are contained in the Renewable Energy Systems AAS Degree.

RENEWABLE ENERGY SYSTEMS CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET</td>
<td>27</td>
</tr>
<tr>
<td>ELT</td>
<td>2</td>
</tr>
<tr>
<td>MTH</td>
<td>10</td>
</tr>
<tr>
<td>RES Program Electives</td>
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</tr>
<tr>
<td><strong>Total Credits</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
- EET 101 Introduction to Electronic Testing Equipment/Soldering/Tools 1
- EET 110 Introduction to Renewable Energy 3
- EET 111 Electrical Circuit Analysis I 5
- EET 121 Digital Systems I 3
- MTH 111 College Algebra 5

Second Term
- EET 112 Electrical Circuit Analysis II 5
- EET 122 Digital Systems 2: Computing Systems 4
- EET 188 Industrial Safety 1
- MTH 112 Elementary Functions 5
- RES Program Electives 3

Third Term
- EET 113 Electrical Power 5
- ELT 125 Basic Programmable Controllers 2

**Total Credits:** **42**

1. REE 201 at OIT can substitute for EET 110

RENEWABLE ENERGY SYSTEMS PROGRAM ELECTIVES
Wind Power: 2
- EET 179 Fuel Cell Systems 3
- EET 269 Wind Mechanics 3

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

2. RET 122 of CGCC can be used as an elective

EMERGENCY MANAGEMENT
Cascade Campus
Public Services Education Building (PSEB), Room 133
971-722-5530
www.pcc.edu/programs/emergency-mgmt/

CAREER AND PROGRAM DESCRIPTION
Emergency Managers are expected to have a broad range of knowledge as they face the varied threats to our modern society and our personal safety. Today's threats include natural disasters, technological threats and terrorism in its many forms. Expertise in emergency management is needed at every level of government and in the private sector. This broad range of knowledge comes from education and on the job experiences. Emergency Managers must have a knowledge base of hazards, disasters, planning, science, history, 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.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Emergency Management

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Emergency Management

PREREQUISITES AND REQUIREMENTS
This program is limited entry. Students are required to fill out a department application form and meet with a program advisor prior to registering for any 200 level EM course. Students must pass all prerequisites with a C or better in order to enroll in any EM courses with a “200” or higher designator.

EMERGENCY MANAGEMENT AAS DEGREE
Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

EMERGENCY MANAGEMENT DEGREE CREDIT SUMMARY

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EM</td>
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<td>CJA</td>
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<tr>
<td>COMM</td>
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</tr>
<tr>
<td>ETC</td>
<td>4</td>
</tr>
<tr>
<td>HUM</td>
<td>4</td>
</tr>
<tr>
<td>MSD</td>
<td>3</td>
</tr>
<tr>
<td>PHL</td>
<td>4</td>
</tr>
<tr>
<td>PS</td>
<td>4</td>
</tr>
<tr>
<td>PSY</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>EM Program Electives</td>
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<td>Remaining General Education</td>
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</tr>
<tr>
<td><strong>Total Credits</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.
## Programs & Disciplines

### Emergency Management Program

#### First Term
- CJA 101: Cultural Diversity in Criminal Justice Professions
- EM 101: Introduction to Emergency Services
- EM 110: Theory of Emergency Management

#### Second Term
- EM 103: Information Systems of Emergency Management
- EM 203: Disaster Response I
- PHL 191*: Disaster and Public Health
- PS 203*: State and Local Government

#### Third Term
- EM 202: Hazard Mitigation
- EM 204: Disaster Response II
- ETC 105: Crisis Intervention & Critical Incident Stress Management
- HUM 221*: Leadership Development

#### Fourth Term
- COMM 111*: Public Speaking
- EM 201: Disaster Planning & Preparedness
- EM 211: Public Policy & Law in Emergency Management
- MSD 101: Principles of Management and Supervision

#### Fifth Term
- EM 205: Disaster Recovery
- EM 221: Business Continuity or Resumption of Operations Planning
- PSY 101*: Psychology and Human Relations
- WR 227: Technical and Professional Writing I

#### Sixth Term
- EM 222: Disaster Exercise Design and Evaluation
- EM 223: Terrorism

#### Electives
- Any pre-approved CJA, EMS, ETC or FP courses may be used to fill the elective requirement.
- Could be used as General Education

### EMERGENCY MEDICAL SERVICES

#### Cascade Campus
- Public Services Education Building (PSEB), Room 133
- 971-722-5530
- 971-722-5535 (Fax)
- www.pcc.edu/emergency-medical

#### Career and Program Description
- The Emergency Medical Services Department offers career training for entry-level positions in emergency medical settings. Ambulance companies, fire departments, police departments, and various other industries requiring emergency medical services may employ EMS Providers. After successful completion of all requirements for EMT, AEMT, Intermediate, or Paramedic training, the student is eligible to apply to take the respective state licensure exams. Other emergency medical training offered includes First Responder/EMS Responder and EMS continuing education.
The Emergency Medical Services Department trains and educates EMS professionals to excel in meeting the needs of the community. EMS Providers respond to medical emergencies by providing immediate care and transportation to the ill and injured. This department combines classroom lectures, hands-on skills labs and appropriate cooperative clinical and field experience to provide students with cognitive, psychomotor, and affective competence to function as effective EMS providers.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Emergency Medical Technician-Paramedic

PREREQUISITES AND REQUIREMENTS

- 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.
- Must have completed high school or GED.
- Must be a minimum of 18 years of age.
- Must have documented results of: TB exam (within 6 months), MMR (measles, mumps, and rubella immunity) if born after 12-31-56, Tdap (within past 10 years), Hepatitis B immunization series started, Varicella (chicken pox immunity), influenza (one dose each year for students needing clinical placement).
- AHA Healthcare Provider BLS (CPR) card current through certification/licensure testing.

Applicants for EMS courses must meet all prerequisites prior to registration into EMS courses. Satisfactory Criminal History Background check and drug screening will be mandatory to qualify for clinical rotations and state licensure. The cost for Criminal History Background check and drug screening will be mandatory to qualify for clinical rotations and state licensure. The cost for Criminal History Background check and drug screening is the responsibility of the applicant/student. Submit photocopies of transcripts, immunization documentation and completed application to the EMS Department for review. Incomplete applications will not be accepted. Applicants for the paramedic level must complete a departmental selection process. Attendance of the first session of each course is mandatory. Students missing the first class will be dropped from the roster by the department.

Applicants should be aware that the following questions are asked on the National Registry EMT and/or the Oregon EMT Application:

1. Do you or have you had within the past 10 years, any physical or mental condition that impairs, could impair, or has impaired your ability to perform the duties of an EMS Provider? 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 EMS Provider.
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 EMS Provider?
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 EMS Provider? (Discipline includes suspension, letter of reprimand, resignation in lieu of termination, a limitation or restriction of scope of practice or dismissal for cause.)
6. Have you been named in a lawsuit alleging medical malpractice or misconduct related to providing medical care?
7. Have you ever been disciplined, denied or revoked by the National Registry of EMTs or any health care certifying/licensing agency?
8. Have you ever surrendered or resigned a health care license or certificate?
9. Have you lived, worked or attended school outside of Oregon for 60 or more consecutive days in the last 5 years?

EMERGENCY MEDICAL TECHNICIAN – PARAMEDIC AAS DEGREE

Minimum 107 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

EMERGENCY MEDICAL TECHNICIAN-PARAMEDIC

DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
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<td>EMS</td>
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<tr>
<td>BI</td>
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<tr>
<td>CAS or CIS</td>
<td>3</td>
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<tr>
<td>COMM</td>
<td>3</td>
</tr>
<tr>
<td>HE</td>
<td>2</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>PE</td>
<td>1</td>
</tr>
<tr>
<td>PSY</td>
<td>4</td>
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<tr>
<td>WR</td>
<td>4</td>
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<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>Total Credits</td>
<td>107</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>EMS 100</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Emergency Medical Services</td>
<td></td>
</tr>
<tr>
<td>PSY 101 (or higher)</td>
<td>4</td>
</tr>
<tr>
<td>Psychology and Human Relations</td>
<td></td>
</tr>
<tr>
<td>WR 121</td>
<td>4</td>
</tr>
<tr>
<td>English Composition</td>
<td></td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 231</td>
<td>4</td>
</tr>
<tr>
<td>Human Anatomy &amp; Physiology I</td>
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</tr>
<tr>
<td>EMS 105</td>
<td>5</td>
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<tr>
<td>EMT Part I</td>
<td></td>
</tr>
<tr>
<td>COMM 111 (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Public Speaking</td>
<td></td>
</tr>
<tr>
<td>MTH 65</td>
<td>4</td>
</tr>
<tr>
<td>Introductory Algebra - Second Term</td>
<td></td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 232</td>
<td>4</td>
</tr>
<tr>
<td>Human Anatomy &amp; Physiology II</td>
<td></td>
</tr>
<tr>
<td>EMS 106</td>
<td>5</td>
</tr>
<tr>
<td>EMT Part II</td>
<td></td>
</tr>
<tr>
<td>EMS 116</td>
<td>3</td>
</tr>
<tr>
<td>Emergency Medical Services Rescue</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 233</td>
<td>4</td>
</tr>
<tr>
<td>Human Anatomy &amp; Physiology III</td>
<td></td>
</tr>
<tr>
<td>EMS 113</td>
<td>2</td>
</tr>
<tr>
<td>Emergency Response Communication/Documentation</td>
<td></td>
</tr>
<tr>
<td>EMS 114</td>
<td>2</td>
</tr>
<tr>
<td>Emergency Response Patient Transportation</td>
<td></td>
</tr>
</tbody>
</table>
EMERGENCY MEDICAL SERVICES ONE-YEAR CERTIFICATE

Minimum 57 credits. Students must meet certificate requirements. The Emergency Medical Services Certificate is a related certificate. All courses are contained in the Emergency Medical Technician-Paramedic AAS Degree.

EMERGENCY MEDICAL SERVICES CERTIFICATE CREDIT SUMMARY

<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>COMM</td>
<td>3</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>PSY</td>
<td>4</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
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</tr>
<tr>
<td>Total Credits</td>
<td>57</td>
</tr>
</tbody>
</table>

* Could be used as General Education

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>EMS 100</td>
<td>3</td>
</tr>
<tr>
<td>PSY 101 (or higher)</td>
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</tr>
<tr>
<td>WR 121</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
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<td>Total Credits</td>
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Second Term

<table>
<thead>
<tr>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BI 231</td>
<td>4</td>
</tr>
<tr>
<td>COMM 111 (or higher)</td>
<td>3</td>
</tr>
<tr>
<td>EMS 105</td>
<td>5</td>
</tr>
<tr>
<td>MTH 65</td>
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<tr>
<td>Total Credits</td>
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Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 232</td>
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<tr>
<td>EMS 106</td>
<td>5</td>
</tr>
<tr>
<td>Total Credits</td>
<td>9</td>
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Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 233</td>
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<tr>
<td>EMS 113</td>
<td>2</td>
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<td>EMS 114</td>
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<tr>
<td>EMS 115</td>
<td>3</td>
</tr>
<tr>
<td>EMS 118</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>57</td>
</tr>
</tbody>
</table>

CAREER AND PROGRAM DESCRIPTION

Emergency Dispatch Services is a two track program offered over three consecutive terms, beginning in fall term and completing in spring of the following year. Students will complete a 49-50 credit hour curriculum. All ETC students will take the same courses fall and winter terms. Based upon academic performance and skills assessment students will enroll in either the 9-1-1 track or the Service Dispatch track for their third term. The 9-1-1 track consists of 50 credits and requires passing the CRITICALL computer-based testing program with a total score of 75% and passing ETC 110 and ETC 111, the 9-1-1 simulation labs with a grade of "C" or better. The Service Dispatch track consists of 49 credits and will emphasize computer skills and customer service in the third term. Students in both tracks will have the opportunity to sit for the National Academies of Emergency Dispatch – Basic Telecommunicator Certificate exam.

SERVICE DISPATCH TRACK

A service dispatcher works in a call center environment, receiving calls from customers, clients, agencies and other entities requiring specific services. Most of these call centers deal with routine service requests, scheduling service appointments or providing information or referrals. Service dispatchers input data into computer systems designed to schedule appointments, provide trouble-shooting advice, recommend equipment upgrades, route calls to specialists or schedule appointments for field service providers and calculate billing information. Many service dispatch positions also require response to urgent or time-sensitive problems, such as power failures, water supply issues, equipment failures, traffic accidents or other transportation issues. Service dispatchers may handle emergency situations, including medical emergencies and environmental problems effecting specific locations or large geographic areas. Call centers can service a small area, such as a town or county, or large geographical areas, such as, multiple states.

The Service Dispatch Track for their third term. The 9-1-1 track consists of 50 credits and will emphasize computer skills and customer service in the third term. Students in both tracks will have the opportunity to sit for the National Academies of Emergency Dispatch – Basic Telecommunicator Certificate exam.

SERVICE DISPATCH TRACK

A service dispatcher works in a call center environment, receiving calls from customers, clients, agencies and other entities requiring specific services. Most of these call centers deal with routine service requests, scheduling service appointments or providing information or referrals. Service dispatchers input data into computer systems designed to schedule appointments, provide trouble-shooting advice, recommend equipment upgrades, route calls to specialists or schedule appointments for field service providers and calculate billing information. Many service dispatch positions also require response to urgent or time-sensitive problems, such as power failures, water supply issues, equipment failures, traffic accidents or other transportation issues. Service dispatchers may handle emergency situations, including medical emergencies and environmental problems effecting specific locations or large geographic areas. Call centers can service a small area, such as a town or county, or large geographical areas, such as, multiple states.

The Service Dispatch Track for their third term. The 9-1-1 track consists of 50 credits and will emphasize computer skills and customer service in the third term. Students in both tracks will have the opportunity to sit for the National Academies of Emergency Dispatch – Basic Telecommunicator Certificate exam.

PORTLAND COMMUNITY COLLEGE ■ 2014-2015
EMERGENCY TELECOMMUNICATOR: 9-1-1

DISPATCHER TRACK

An Emergency 9-1-1 dispatcher receives information from the public and 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. 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 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. 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.

DEGREES AND CERTIFICATES OFFERED

ONE-YEAR CERTIFICATE

Emergency TeleCommunicator/Service Dispatcher
Emergency TeleCommunicator/911 Dispatcher

PREREQUISITES AND REQUIREMENTS

Placement into WR 121 and basic keyboarding skill equivalent to 25 WPM.

APPLICATION AND ACCEPTANCE

The Emergency TeleCommunicator (ETC) Program is open to all high school graduates or equivalent who meet the standards for employment in the 9-1-1 field, including good physical condition and high moral standards. Reading and writing skills are important.

Students planning to apply for the Emergency TeleCommunicator Program should contact the program coordinator or program advisor for specific eligibility requirements and an application. Advising appointments will be scheduled upon request and are required prior to registering for classes. Because of the unique responsibilities involved in public safety emergency communications, the Emergency TeleCommunicator Program reserves the right to require that a student, who appears to the department, unsuited for emergency communications employment be counseled into another area of study.

THE SELECTION PROCESS

Selection into the ETC Program requires the following steps be successfully completed:

1. Application – An application form is available in the Emergency Services Department Office, Public Services Education Building, Room 133 at Cascade Campus. Application forms are also available by mail upon request. Returned application forms will be processed upon receipt of all documentation listed in the application packet. Application for admission may be made any term, new students will be accepted for fall term, if space is available. Students wishing to complete the program in one year must begin fall term.

2. Placement test scores or transcript with course completion are required.
   - Placement into WR 121
   - Keyboarding certificate showing a minimum typing speed of 25 WPM for 3 minutes with 90% accuracy.

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 must begin fall term.

5. Current certification in CPR/AED

6. Current certification in First-Aid for the Professional Rescuer

ONE-YEAR CERTIFICATE

Emergency TeleCommunicator/911 Dispatcher (p. 101)
Emergency TeleCommunicator/Service Dispatcher (p. 101)

EMERGENCY TELECOMMUNICATOR/911 DISPATCHER

Minimum 50 credits. Students must meet all certificate requirements.

EMERGENCY TELECOMMUNICATOR/911 DISPATCHER CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETC</td>
<td>34</td>
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<tr>
<td>CAS</td>
<td>3</td>
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<tr>
<td>CJA</td>
<td>3</td>
</tr>
<tr>
<td>EM</td>
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</tr>
<tr>
<td>EMS</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>50</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 Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>EM 101</td>
<td>Introduction to Emergency Services</td>
<td>4</td>
</tr>
<tr>
<td>ETC 103</td>
<td>Introduction to Emergency Telecommunications</td>
<td>4</td>
</tr>
<tr>
<td>ETC 106</td>
<td>Introduction to Law for Tele-Communicators</td>
<td>3</td>
</tr>
<tr>
<td>ETC 108</td>
<td>Introduction to Computer Aided Dispatching</td>
<td>2</td>
</tr>
<tr>
<td>ETC 110</td>
<td>Communication Center Operations - Basic Skills</td>
<td>3</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
</tbody>
</table>
PORTLAND COMMUNITY COLLEGE  ■  2014-2015

PROGRAMS & DISCIPLINES

EM 103  Information Systems of Emergency Management  3
ETC 104  Emergency Telecommunications - Call Taking  4
ETC 111  Communication Center Operations - Intermediate Skills  3
ETC 124  Radio Communications Lab  1

Third Term
CJA 101  Cultural Diversity in Criminal Justice Professions  3
ETC 113  Communications Center Operations: Service Dispatcher  3
ETC 215  ES Capstone: Emergency Services Hiring Process  3
ETC 280A  Cooperative Education: Emergency TeleCommunicator  1
MSD 105  Workplace Communication Skills  3
MSD 117  Customer Relations  3
MSD 151  Working with Difficult People  1

Total Credits:  50

EMERGENCY TELECOMMUNICATOR/SERVICE DISPATCHER ONE-YEAR CERTIFICATE

Minimum 49 credits. Students must meet all certificate requirements.

EMERGENCY TELECOMMUNICATOR/SERVICE DISPATCH CERTIFICATE CREDIT SUMMARY

ETC  29
CAS  3
CJA  3
EM  7
MSD  7

Total Credits  49

COURSE OF STUDY

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

First Term
EM 101  Introduction to Emergency Services  4
ETC 103  Introduction to Emergency Telecommunications  4
ETC 106  Introduction to Law for Tele-Communicators  3
ETC 108  Introduction to Computer Aided Dispatching  2
ETC 110  Communication Center Operations - Basic Skills  3

Second Term
CAS 122  Keyboarding for Speed and Accuracy  3
EM 103  Information Systems of Emergency Management  3
ETC 104  Emergency Telecommunications - Call Taking  4
ETC 111  Communication Center Operations - Intermediate Skills  3
ETC 124  Radio Communications Lab  1

Third Term
ETC 202  Emergency Medical Dispatch Overview  2
CJA 101  Cultural Diversity in Criminal Justice Professions  3
ETC 113  Communications Center Operations: Service Dispatcher  3
ETC 215  ES Capstone: Emergency Services Hiring Process  3
ETC 280A  Cooperative Education: Emergency TeleCommunicator  1
MSD 105  Workplace Communication Skills  3
MSD 117  Customer Relations  3
MSD 151  Working with Difficult People  1

Total Credits:  49

EMPLOYMENT SKILLS TRAINING

CAREER AND PROGRAM DESCRIPTION

This in an individualized certificate program designed to provide maximum flexibility for short-term educational opportunities targeted at specific occupational goals. The purpose of this program is to enable individuals to obtain employment, upgrade current workplace skills, maintain employment, and increase employability. A minimum of 12 credits and a maximum of 44 credits must be completed within 2 years.

LESS THAN ONE-YEAR CERTIFICATE

Employment Skills Training

PREREQUISITES AND REQUIREMENTS

An interview with an advisor or a faculty member in the career technical department is required to determine the individual’s career goals as they relate to employability and coursework. Submission of an Employment Skills Training (EST) application is required and follows the interview with faculty. All PCC college-level courses are eligible to be included in the certificate. Developmental or basic education courses may not be included as part of the certificate. “Next steps” for continuing the educational process will be discussed and reviewed by the student, the faculty advisor, and possibly the employer. Prerequisite requirements for each employment skills training certificate are determined by the career technical department.

ENGINEERING

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

CAREER AND PROGRAM DESCRIPTION

Engineering is a profession in which knowledge of mathematics and the sciences, gained through study and experience, is applied for the benefit of society. Engineers solve technical problems as members of project teams or as individual specialists. Work may involve research, development, planning, design, construction, manufacturing, supervision and management. Engineering is a licensed profession in all states.

PCC offers curricula equivalent to the first two years of study for most engineering disciplines at Oregon State University (OSU), Portland State University (PSU), the University of Portland (UP), Washington State University-Vancouver (WSUV) and Oregon Institute of Technology (OIT). These engineering disciplines include: Chemical Engineering, Civil Engineering, Computer Engineering, Construction Engineering Management, Electrical Engineering, Environmental

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 (p. 15) section of this catalog for information concerning the granting of degrees.

PREREQUISITES AND REQUIREMENTS

All students must have an advising interview with an engineering faculty advisor. Students must place in WR 115 and MTH 251. High school courses in chemistry, physics and microcomputer literacy are highly recommended. Students lacking these courses are encouraged to take CH 100, PHY 101 and/or CIS 120 as appropriate, prior to beginning the program.

Students lacking the necessary prerequisites may upgrade their skills by taking writing, mathematics, science and microcomputer literacy courses or by completing the first year of one of PCC’s two-year engineering technology programs (civil, electronic, or mechanical). See a program advisor for information. To arrange a meeting with an engineering advisor, call the Engineering department at 971-722-4159 or e-mail to engineering@pcc.edu.

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

ENGLISH/LITERATURE

See the Course Description (p. 127) (ENG prefix) section of this catalog for individual Literature courses and course prerequisites.

ENGLISH FOR SPEAKERS OF OTHER LANGUAGES (ESOL)

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5518

Rock Creek Campus
Building 2, Room 210
971-722-7425

Southeast Campus
Mt. Tabor Hall (MTH), Room 128
971-722-6255

Sylvania Campus
Communication Tech Building (CT), Room 205
971-722-4565

Newberg Center
135 Werth Blvd., Newberg
971-722-4565

Hillsboro Education Center
775 SE Baseline St, Hillsboro
971-722-6817

www.pcc.edu/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. Only international students may choose the credit option for Level 4. The Level 5 credit option is for both international students and also for resident students. 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. 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.

Students should contact the campus they want to attend to find out about testing. International students should first contact an international student advisor at 971-722-5670 (CA), 971-722-7150 (RC) or 971-722-8310 (SY).

ENVIRONMENTAL STUDIES

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

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

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

DESCRIPTION

Environmental Studies is the interdisciplinary field that incorporates social sciences, mathematics, chemistry, biology, and geology in order to examine the interactions between human beings and the natural world. Environmental studies allows scientists and laypersons to understand the complex interaction between various organisms while also equipping policy-makers with important data to make critical decisions. Environmental Studies is important to a broad array of disciplines, from architecture to law to public health. Recent estimates show a growing demand in governmental, commercial, and industrial employment for professionals whose qualifications include environmental analytical skills.

Students explore environmental studies by enrolling in foundation classes in mathematics and the natural and social sciences. PCC offers students the opportunity to earn the Associate of Arts Oregon Transfer (AAOT) degree to complete courses in preparation for a bachelor’s degree in environmental studies or environmental science (if transferred to a four-year program at a college or university).
Students must check the specific requirements of the bachelor’s program to which they intend to transfer. The opportunity to learn interdisciplinary skills allows students to customize their educational career goals while providing a solid foundation for future learning. For information regarding the Environmental Studies major transfer program, please contact the Environmental Studies office at Rock Creek at 971-722-7257.

FACILITIES MAINTENANCE TECHNOLOGY

Swan Island Trades Center
Room 109
6400 North Cutter Circle, Portland OR, 97217
971-722-5650 or 971-722-5651
www.pcc.edu/fm

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.

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.

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.

FACILITIES MAINTENANCE 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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

FACILITIES MAINTENANCE DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
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<td>FMT 100 Introduction to Facilities Maintenance Systems</td>
<td>2</td>
</tr>
<tr>
<td>FMT 101 Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 102 Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 103 Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 111 Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 112 Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 113 Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 119 Water Treatment and Distribution</td>
<td>2</td>
</tr>
<tr>
<td>FMT 122 Introduction to Boilers</td>
<td>3</td>
</tr>
<tr>
<td>FMT 125 Natural Gas Equipment I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 201 Introduction to Chiller Systems</td>
<td>3</td>
</tr>
<tr>
<td>FMT 202 Direct Digital Control Advanced Technology</td>
<td>3</td>
</tr>
<tr>
<td>FMT 207 Pneumatic Controls</td>
<td>2</td>
</tr>
<tr>
<td>FMT 222 Intermediate Boilers</td>
<td>2</td>
</tr>
<tr>
<td>FMT 280A Cooperative Work Experience</td>
<td>8</td>
</tr>
<tr>
<td>PHY 101 Fundamentals of Physics I</td>
<td>4</td>
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<tr>
<td>PSY 101 Psychology and Human Relations</td>
<td>4</td>
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<td>FMT Electives</td>
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<tr>
<td>Remaining General Education</td>
<td>8</td>
</tr>
<tr>
<td>Total Credits</td>
<td>90</td>
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</tbody>
</table>

* Could be used as General Education

FACILITIES MAINTENANCE PROGRAM ELECTIVES

Any FMT, ELT, APR, BA, BCT, CIS, CAS, CS, MSD, WLD, ARCH, AB, AMT, EET, MCH, AMT, CMET, DRF, DS, DST, ENGR, ESR, MT, HE, HPE, OST, PE, COMM, PHY, BI, CH, GS, SPA, MTH (100 level and above) courses not found within the degree or certificate course of study. WR 227, ART 292, and ART 294

LESS THAN ONE-YEAR CERTIFICATE

Facilities Maintenance Technology (p. 105)
LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
HVAC/R Installer (p. 105)
Oregon State Bureau of Labor and Industries Approved Pre-Apprenticeship Training

FACILITIES MAINTENANCE LESS THAN ONE-YEAR CERTIFICATE
Minimum 44 credits. Students must meet certificate requirements. The Facilities Maintenance Certificate is a related certificate. All courses are contained in the Facilities Maintenance AAS Degree.

FACILITIES MAINTENANCE CERTIFICATE CREDIT SUMMARY

<table>
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<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>FMT</td>
<td>30</td>
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<tr>
<td>ARCH</td>
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<tr>
<td>BA</td>
<td>4</td>
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<tr>
<td>ELT</td>
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</tr>
<tr>
<td>FMT Program Electives</td>
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</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>44</strong></td>
</tr>
</tbody>
</table>

FACILITIES MAINTENANCE CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 162</td>
<td>Commercial Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
<td>4</td>
</tr>
<tr>
<td>ELT 125</td>
<td>Basic Programmable Controllers</td>
<td>2</td>
</tr>
<tr>
<td>ELT 220</td>
<td>OSHA 30 Hr Safety Training</td>
<td>3</td>
</tr>
<tr>
<td>FMT 100</td>
<td>Introduction to Facilities Maintenance</td>
<td>1</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>
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<td>FMT 113</td>
<td>Refrigeration Electrical III</td>
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<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</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 Control Advanced Technology</td>
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</tr>
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<td>FMT 222</td>
<td>Intermediate Boilers</td>
<td>3</td>
</tr>
<tr>
<td>FMT Program Electives</td>
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</tr>
<tr>
<td><strong>Total Credits</strong></td>
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<td></td>
</tr>
</tbody>
</table>

FACILITIES MAINTENANCE PROGRAM ELECTIVES

Any FMT, ELT, APR, BA, BCT, CIS, CAS, CS, MSD, WLD, ARCH, AB, AMT, EET, MCH, AMT, CMET, DRF, DS, DST, ENGR, ESRI, M, HE, HPE, OST, PE, COMM, PHY, BI, CH, GS, SPA, MTH (100 level and above) courses not found within the degree or certificate course of study, WR 227, ART 292, and ART 294

HVAC/R INSTALLER: CAREER PATHWAY CERTIFICATE
Minimum 14 credits. The HVAC/R Installer Certificate is a Career Pathway. All courses for the certificate are contained in the Facilities Maintenance AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

FIRE PROTECTION TECHNOLOGY

Cascade Campus
Public Services Education Building (PSEB), Room 132
971-722-5707
971-722-5535 (Fax)
www.pcc.edu/fire

CAREER AND PROGRAM DESCRIPTION

Those enrolled in the Fire Protection Technology Program are preparing for occupations or advancement in fire suppression, investigation, prevention, public safety education, emergency management, emergency medical and rescue services, hazardous materials technology, wildland fire fighting, college transfer and other educational programs.

The PCC program is designed to correlate classroom, laboratory and field experience in public and private sector structural and wildland fire organizations. The program that follows is designed for both students who wish to enter the fire service (pre-service) and professional fire fighters who wish to obtain an AAS degree, or meet specific Oregon Department of Public Safety Standards and Training accreditation requirements, or meet entry requirements for BA/BS programs in fire administration at Eastern Oregon or Western Oregon University.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Fire Protection Technology

LESS THAN ONE-YEAR CERTIFICATE
Fire Protection Technology

PREREQUISITES AND REQUIREMENTS

All students interested in exploring the fire protection program must first take FP 101 as part of the prerequisites to enter the Fire Academy program. Attendance at the first Fire Academy class is mandatory. No Exceptions. Students who miss the first class will be dropped from the roster by the department. In addition, students must be enrolled in both FP 111 and FP 112.

Students that intend to enroll in the Fire Academy will be required to have a physicians release to use equipment designed to protect the respiratory system from the products of combustion and hazardous chemicals. It is recommended that the students acquire a physicians release prior to committing to the program. This equipment includes, but is not limited to: self contained breathing apparatus (SCBA), respirators and filter mask.

Due to the unique responsibilities involved in the practical application of fire protection and emergency response during lab periods and cooperative education assignments, the Fire Protection Technology Department reserves the right to counsel and guide students who demonstrate unsuitable characteristics (unsafe, unethical or immoral behavior, or physical inability to perform standard job duties) into another area of study.

Students who have a health, physical or psychological problem, that may affect or be affected by the use of protective breathing equipment should contact the department prior to entering the program.
Satisfactory criminal history background checks will be mandatory to qualify for cooperative education and state certification as a firefighter and EMT Basic. The cost for the criminal history background check is the responsibility of the student.

Fire Protection Technology students should be aware that the following questions are asked on the National Registry EMT and/or the Oregon EMT Application:

1. Do you or have you had within the past 10 years, any physical or mental condition that impairs, could impair, or has impaired your ability to perform the duties of an EMT? If you answer yes, explain whether your condition is controlled by medication or other treatment and how your condition treated or untreated, affects your ability to perform the duties of an EMT.

2. Do you or have you used in the last 10 years, any drug or chemical substance for other than legitimate medical purposes that prejudices 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 been named in a lawsuit alleging medical malpractice or misconduct related to providing medical care?

7. Have you ever been disciplined, denied or revoked by the National Registry of EMTs or any health care certifying/licensing agency?

8. Have you ever surrendered or resigned a health care license or certificate?

9. Have you lived, worked or attended school outside of Oregon for 60 or more consecutive days in the last 5 years?

**FIRE PROTECTION TECHNOLOGY AAS DEGREE**

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. A maximum of 24 Pass/No Pass credits are allowed in the Fire Protection Technology AAS Degree. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**FIRE PROTECTION TECHNOLOGY DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FP</td>
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<tr>
<td>COMM</td>
<td>8</td>
</tr>
<tr>
<td>PHL</td>
<td>4</td>
</tr>
<tr>
<td>PSY</td>
<td>4</td>
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<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Fire Protection Degree Electives</td>
<td>18</td>
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<tr>
<td>Remaining General Education</td>
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<tr>
<td><strong>Total Credits</strong></td>
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**FIRE PROTECTION DEGREE COURSES**

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<td>Fundamentals of Fire Prevention</td>
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</tr>
<tr>
<td>FP 130</td>
<td>Fire Protection Hydraulics and Water Supply</td>
<td>3</td>
</tr>
<tr>
<td>FP 137</td>
<td>Fire Protection Systems</td>
<td>3</td>
</tr>
<tr>
<td>FP 166</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FP 170</td>
<td>Introduction to Firefighting Tactics and Strategy</td>
<td>3</td>
</tr>
<tr>
<td>FP 207</td>
<td>Fire Service Based Emergency Medical Service</td>
<td>3</td>
</tr>
<tr>
<td>FP 210</td>
<td>Multicultural Strategies for Firefighters</td>
<td>3</td>
</tr>
<tr>
<td>FP 212</td>
<td>Fire Investigation (Cause Determination)</td>
<td>3</td>
</tr>
<tr>
<td>FP 214</td>
<td>Occupational Safety &amp; Health for the Fire Science</td>
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</tr>
<tr>
<td>FP 225</td>
<td>Fire Department Customer Service</td>
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</tr>
<tr>
<td>FP 240</td>
<td>Emergency Services Instructor I</td>
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<td>FP 273</td>
<td>Fire Service Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>FP 274</td>
<td>Introduction to Fire and Emergency Administration</td>
<td>3</td>
</tr>
<tr>
<td>FP 275</td>
<td>Community and Government Relations</td>
<td>3</td>
</tr>
<tr>
<td>FP 289</td>
<td>Emergency Service Lifetime Fitness and Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>FP 295</td>
<td>Major Emergency Tactics/Strategy</td>
<td>3</td>
</tr>
<tr>
<td>PHL 202</td>
<td>Ethics</td>
<td>4</td>
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<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
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</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing I</td>
<td>4</td>
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<tr>
<td><strong>Fire Protection Degree Electives</strong></td>
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<tr>
<td><strong>Remaining General Education</strong></td>
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**FIRE PROTECTION CERTIFICATE**

Minimum 42 credits. Students must meet certificate requirements. The Fire Protection Certificate is a related certificate. All courses are contained within the Fire Protection Technology AAS Degree.
FIRE PROTECTION CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
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<td>FP</td>
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COURSE OF STUDY

The coursework listed below is required.

<table>
<thead>
<tr>
<th>Course</th>
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<td>EMS 105 EMT Part I</td>
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<td>EMS 106 EMT Part II</td>
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<td>FP 101 Principles of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FP 111 Fire Academy Part 1</td>
<td>10</td>
</tr>
<tr>
<td>FP 112 Fire Academy Part 2</td>
<td>7</td>
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<tr>
<td>FP 123 Hazardous Materials Awareness and Operations</td>
<td>3</td>
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<tr>
<td>FP 133 Wildland Firefighter</td>
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<td>FP 280A Cooperative Education: Fire Protection</td>
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FITNESS TECHNOLOGY

Sylvania Campus
Health Technology Building (HT), Room 215
971-722-4210
www.pcc.edu/fittech

CAREER AND PROGRAM DESCRIPTION

As a fitness professional you will be part of the preventive health care team working in health and fitness clubs, wellness centers, public and private recreation facilities, hospitals and corporate fitness centers. Our program prepares you for job entry as a fitness technologist/specialist, personal trainer or group fitness instructor. The fitness professional performs a variety of instructional and administrative tasks. Instructional tasks include directing safe and effective exercise programs, conducting fitness testing and instructing clients in appropriate sport, fitness, and wellness activities. Administrative duties may include sales, day-to-day business operations, and member retention efforts. Portland Community College Fitness Technology Graduates have a background in basic anatomy and physiology, applied kinesiology, exercise physiology, sports nutrition, fitness assessment and programming, as well as training in interpersonal skills and fitness promotion. Professionals working in this field are known by a variety of titles within the industry, including but not limited to: personal trainer, exercise specialist, group exercise leader, fitness instructor, activity director, strength and conditioning coach, and member services specialist.

Students are prepared for entry level work as a fitness professional, such as a personal trainer or fitness instructor. The program is designed to correlate classroom and laboratory experience with practical experience in fitness facilities in the community. Students who successfully complete the program are prepared to take national personal trainer certifying examinations given by the American College of Sports Medicine (ACSM), the National Strength and Conditioning Association (NSCA) or the American Council on Exercise (ACE). The Fitness Technology program has an articulation agreement in place with Portland State University and Concordia University. Students who successfully complete the Fitness Technology AAS degree may transfer to PSU or CU as a junior.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Fitness Technology

ONE-YEAR CERTIFICATE

Fitness Technology

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

Healthy Older Adult Fitness

PREREQUISITES AND REQUIREMENTS

- High school diploma or equivalent
- Applicant needs to be a PCC student before they apply.
- Due to limited space, all prerequisites and requirements must be completed prior to application and acceptance into the program.
- Program entry begins Spring/Fall term. Check the Fitness Technology website for application deadlines.
- Attend Fitness Technology Information Session. Check the Fitness Technology website for dates and times of sessions.
- Must have completed MTH 65 or higher and WR 121 with a C or better.
- All courses must be completed with a P or C or better.

Applicants with disabilities are encouraged to contact Disability Services 971-722-4341.

Transcripts with previous coursework must be evaluated by student records prior to applying to the Fitness Technology program.

FITNESS TECHNOLOGY AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

FITNESS TECHNOLOGY DEGREE CREDIT SUMMARY

<table>
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<th>Credits</th>
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<td>PT</td>
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<tr>
<td>CG</td>
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<tr>
<td>HE</td>
<td>2</td>
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<tr>
<td>PE</td>
<td>14</td>
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<td>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. Most courses are offered only in the term listed.

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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FT 101</td>
<td>Fitness Technology Seminar</td>
</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention &amp; Management</td>
</tr>
<tr>
<td>FT 103</td>
<td>Nutrition for Fitness Instructors</td>
</tr>
<tr>
<td>FT 104</td>
<td>Fitness Assessment &amp; Programming I</td>
</tr>
<tr>
<td>FT 105</td>
<td>Fitness Assessment &amp; Programming II</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
</tr>
<tr>
<td>FT 107</td>
<td>Exercise Science I</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
</tr>
<tr>
<td>FT 180</td>
<td>Fitness Technology Internship Preparation</td>
</tr>
<tr>
<td>FT 201</td>
<td>Fitness Assessment and Program III</td>
</tr>
<tr>
<td>FT 202</td>
<td>Fitness and Aging</td>
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</table>
### PROGRAMS & DISCIPLINES

The coursework listed below is required. The following is an example of a term-by-term breakdown. Most courses are offered only in the term listed.

<table>
<thead>
<tr>
<th>COURSE</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>FT 280</td>
<td>Cooperative Education: Fitness Technology</td>
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<tr>
<td>CG 280A</td>
<td>CE: Career Development</td>
<td>2</td>
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<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>HE 295</td>
<td>Health and Fitness for Life</td>
<td>2</td>
</tr>
<tr>
<td>PE 295</td>
<td>Health and Fitness for Life Lab</td>
<td>1</td>
</tr>
<tr>
<td>PE 181A</td>
<td>Beginning Weight Training - Coed</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181B</td>
<td>Intermediate Weight Training - Coed</td>
<td></td>
</tr>
<tr>
<td>or PE 181C</td>
<td>Advanced Weight Training - Coed</td>
<td></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: Group Fitness</td>
<td>2</td>
</tr>
<tr>
<td>PE 282B</td>
<td>Professional Activities: Special Populations</td>
<td>2</td>
</tr>
<tr>
<td>PE 283</td>
<td>Professional Activities: Mind-Body Disciplines</td>
<td>1</td>
</tr>
<tr>
<td>PE 287</td>
<td>Professional Activities: Aquatics</td>
<td>1</td>
</tr>
<tr>
<td>PE 288</td>
<td>Professional Activities: Team Sports Training</td>
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</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
<td>4</td>
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<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
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<tr>
<td>PE 282A</td>
<td>Professional Activities: Group Fitness</td>
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<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training</td>
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</tr>
<tr>
<td>PE 287</td>
<td>Professional Activities: Aquatics</td>
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</tr>
<tr>
<td>PE 283</td>
<td>Professional Activities: Mind-Body Disciplines</td>
<td>2</td>
</tr>
<tr>
<td>PE 288</td>
<td>Professional Activities: Team Sports Training</td>
<td>2</td>
</tr>
<tr>
<td>PE 282B</td>
<td>Professional Activities: Special Populations</td>
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</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
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<tr>
<td>TOTAL CREDITS</td>
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<td>48</td>
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</tbody>
</table>

**Fitness Technology Electives**
- Remaining General Education: recommend BI 112 and/or MTH 111
- Professional Activities courses chosen from these options: PE 282A, PE 282B, PE 283, PE 287, PE 288.

**Fitness Technology Degree Electives**
- Any approved PCC or transfer course.
- Could be used as General Education
- Professional Activities degree requirement: PE 281 and three other Professional Activities courses chosen from these options: PE 282A, PE 282B, PE 283, PE 287, PE 288.

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

Minimum of 26 credits. The Healthy Older Adult Fitness Certificate is a Career Pathway. All courses are contained in the Fitness Technology AAS Degree.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDIT</th>
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</thead>
<tbody>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
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<tr>
<td>FT 180</td>
<td>Fitness Technology Internship Preparation</td>
<td>1</td>
</tr>
<tr>
<td>FT 202</td>
<td>Fitness and Aging</td>
<td>3</td>
</tr>
<tr>
<td>FT 280</td>
<td>Cooperative Education: Fitness Technology</td>
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<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>HE 295</td>
<td>Health and Fitness for Life</td>
<td>2</td>
</tr>
<tr>
<td>PE 181A</td>
<td>Beginning Weight Training - Coed</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181B</td>
<td>Intermediate Weight Training - Coed</td>
<td></td>
</tr>
<tr>
<td>or PE 181C</td>
<td>Advanced Weight Training - Coed</td>
<td></td>
</tr>
<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training</td>
<td>2</td>
</tr>
<tr>
<td>PE 282B</td>
<td>Professional Activities: Advanced Weight Training</td>
<td>2</td>
</tr>
<tr>
<td>PE 295</td>
<td>Health and Fitness for Life Lab</td>
<td>1</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
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<tr>
<td>or SOC 231</td>
<td>Sociology of Health &amp; Aging</td>
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<tr>
<td>TOTAL CREDITS</td>
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**FOOD & NUTRITION**

Rock Creek Campus
Bldg 2 Room 255
971-722-7327
Southeast Campus
PROGRAMS & DISCIPLINES

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.

FRENCH

Sylvania Campus
Communication Technology Building (CT), Room 219
971-722-8008
www.pcc.edu/programs/french

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.

GENERAL SCIENCE

Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209
Rock Creek Campus
Building 7, Room 202
971-722-7500
Southeast Campus
Student Commons (SCOM), Room 214
971-722-6146
Sylvania Campus
Science Technology Building (ST), Room 312
971-722-4174

www.pcc.edu/programs/general-science

DESCRIPTION

General science courses introduce students to their physical environment and its scientific exploration; specific topics examined in these courses include geology, astronomy, oceanography

CAREER AND PROGRAM DESCRIPTION

Foods and Nutrition includes the study of human metabolism, foods and other forms of nutrient delivery that support human health, factors that can affect nutrient availability, the food supply and human health behaviors. Critical inquiries are made into how food and nutrition are marketed and how nutrition recommendations are developed. At PCC, Foods and Nutrition offerings include a 100-level course: Personal Nutrition which emphasizes basic nutrition principals and personal health behaviors; a 200-level course: Nutrition tailored to students pursuing careers in the life sciences and allied health.

GEOGRAPHY

Cascade Campus
Terrell Hall (TH), Room 220
971-722-5251
Rock Creek Campus
Building 3, Room 201
971-722-7327
Southeast Campus
Mt. Scott Hall (MSH), Room 103
971-722-6147
Sylvania Campus
Social Science Building (SS), Room 217
971-722-4289

www.pcc.edu/programs/geography/

DESCRIPTION

Geography is more than just knowing the names of countries, cities, rivers, mountains, and other features of the Earth. It is the study of the spatial distribution and interrelationships of the Earth, its people and physical environment. Geographers analyze the relationship between humans and the environment; examine patterns and processes of place; and take a broad perspective to look at current topics such as climate change, global economics, urban diversity and development, immigration, origin and diffusion of disease, and natural resource use. The Geographic approach is applied at different scales, from local to the global.

Geographers work with quantitative and qualitative data from a variety of sources and they use a variety of tools, including Global Positioning Systems (GPS), Geographic Information Systems (GIS), and other computer applications to collect, display, and analyze spatial data. Computer cartography and GIS software allow geographers to explore the world in much greater detail, and to study and address complex issues.

GIS is one of the top emerging industries in the 21st century. It combines cartography, spatial analysis, and data management to support research and inform decision making. PCC offers a less than one-year GIS Certificate that combines GIS concepts, technology, and real-world experience.

GIS is a framework to acquire, store, manage, analyze, and visualize spatial data. Traditional paper maps are able to display just one view of data, at one point in time. The use of GIS allows the display of information in various spaces and times. GIS provides a suite of tools used to support many kinds of decision-making, as well as statistical and spatial analysis.

The GIS Certificate prepares students to apply GIS with a solid theoretical foundation. A diverse range of geotechnical skills are covered including data capture, spatial and statistical analysis, GPS, Programming, modeling, and cartography.
DEGREES AND CERTIFICATES OFFERED

LESS THAN ONE-YEAR CERTIFICATE

Geographic Information Systems

PREREQUISITES AND REQUIREMENTS

• WR 115 or equivalent placement scores
• RD 115 or equivalent placement scores
• MTH 60 or equivalent placement scores

GEOGRAPHIC INFORMATION SYSTEMS LESS
THAN ONE-YEAR CERTIFICATE

Minimum 44 credits. Students must meet all certificate requirements.

GEOGRAPHIC INFORMATION SYSTEMS
CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
<td>GEO</td>
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<tr>
<td>COMM</td>
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<td>Geography Electives</td>
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<tr>
<td>GIS Electives</td>
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</tr>
<tr>
<td><strong>Total Credits</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. Electives can be distributed throughout the year in a variety of ways, not just the way it is listed below. Students can start the GIS Certificate any term during the year although some GIS-specific classes have limited offerings. It is highly recommended that you talk to the GIS Certificate Program adviser to plan your coursework.

First Term

<table>
<thead>
<tr>
<th>Course</th>
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<td>GEO 265</td>
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<tr>
<td>GIS Elective</td>
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Second Term

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<tr>
<td>GEO 266</td>
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Third Term

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<thead>
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<td>Technical Elective</td>
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GEOGRAPHIC INFORMATION SYSTEMS
CERTIFICATE GIS ELECTIVES

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<td>GEO 250</td>
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<td>GEO 298</td>
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GEOGRAPHIC INFORMATION SYSTEMS
CERTIFICATE GEOGRAPHY ELECTIVES

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<td>CAS 170</td>
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<td>CAS 213</td>
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<td>CAS 215</td>
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<tr>
<td>CIS 133W</td>
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<tr>
<td>CIS 125D</td>
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<tr>
<td>CIS 275</td>
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<td>MTH 243</td>
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GEOGRAPHIC INFORMATION SYSTEMS
CERTIFICATE TECHNICAL ELECTIVES

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<td>CAS 170</td>
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<td>CAS 206</td>
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<td>CAS 213</td>
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<td>4</td>
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<tr>
<td>CIS 133W</td>
<td>4</td>
</tr>
<tr>
<td>CIS 125D</td>
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<td>CIS 275</td>
<td>4</td>
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<tr>
<td>MTH 243</td>
<td>5</td>
</tr>
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GEOLOGY

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

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

Southeast Campus
Student Commons (SCOM), Room 214
971-722-6146

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

www.pcc.edu/programs/geology

DESCRIPTION

Geology is the study of the Earth: its composition, structure, history and the processes which shape the Earth. Geologists investigate landscapes and rocks to discover the story of how the Earth formed and developed over geologic time. Geologists examine problems related to earth hazards, resources and environmental quality and then work toward developing corrective measures. Geology coursework is an important part of many college programs.

The G 201, G 202, G 203, G 291 courses introduce students to the study of geology while preparing them for further study in the earth science field, include a lab component, and are on the PCC General Education course list. The G 207, G 208, G 209 courses introduce students to specific topics within geology and do not include a lab component. The G 160, G 161, G 200A, G 200B G 200C, G 200D, G 200E, G 200F, G 200G field experience courses use field trips to introduce students to the regional geology of the Pacific Northwest. The G 298A, G 298B, G 298C independent study courses allow


students to pursue individualized study and research projects. Geology courses can be taken individually or in any sequence.

GERMAN

Rock Creek Campus
Building 2, Room 210
971-722-7770

Sylvania Campus
Communication Technology Building (CT), Room 219
971-722-8002

www.pcc.edu/programs/german/

DESCRIPTION

All PCC German courses are taught using an immersion method. The objective of all German courses at PCC is to help students 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 German 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.

GERONTOLOGY

Sylvania Campus
Social Science Building (SS), Room 1
971-722-8254 or 971-722-4077

www.pcc.edu/ger

CAREER AND PROGRAM DESCRIPTION

Careers in aging are among the fastest growing and exciting opportunities 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 or enterprise development in response to new opportunities created by an aging society. Graduates of this program will develop problem-solving and research skills through interdisciplinary core courses and electives tailored toward their career goals. Internships, mentorships and career coaching will prepare students to create individualized career paths in service industries responding to a longer living and healthier population. Exponential growth is expected in all service–providing industries related to aging, particularly in the health care services continuum, financial and legal services, leisure, life-long learning, hospitality, fitness and wellness areas.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Gerontology

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Activity Assistant
Activity Consultant

Activity Director
Advanced Behavioral and Cognitive Care
End of Life Care and Support
Gerontology
Horticultural Therapy

PREREQUISITES AND REQUIREMENTS

Candidates should be ready to enter WR 121 and MTH 20 for any certificate and MTH 65 for the degree (demonstrated through placement tests or documented previous college level work.) Those candidates with insufficient background to enter at this level may need to extend the time it takes to complete the program. Faculty advisors will provide information regarding preparatory course work options.

Students may earn one or more Gerontology Career Pathway Certificates alone or in conjunction with the Gerontology Associate of Applied Science Degree. Students may also earn the degree or certificates in conjunction with a certificate or degree in other PCC programs such as fitness technology, interior design, the allied health field, nursing, business, management, paralegal studies, or alcohol and drug counseling. Program articulation agreements are signed or in process with Portland State University Health Studies, Western Oregon University Psychology and Gerontology, Oregon State University Family Studies and Human Development, Eastern Oregon University Gerontology and other colleges and universities. In most cases, students earning the Gerontology AAS Degree can enter human services, social work, social sciences, community health and similar Bachelor level programs 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 in their first or second term in the program. GRN 280A 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 towards the required internship credits, typically up to a total of three credits.

GERONTOLOGY AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

GERONTOLOGY DEGREE CREDIT SUMMARY

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<td>PHL</td>
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<tr>
<td>PSY</td>
<td>4</td>
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<tr>
<td>SOC</td>
<td>16</td>
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<tr>
<td>WR</td>
<td>4</td>
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<td>GRN CAS Electives</td>
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<td>GRN Program Electives</td>
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<td>Total Credits</td>
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GERONTOLOGY DEGREE COURSES

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<th>Title</th>
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<tbody>
<tr>
<td>AD 105</td>
<td>Aging &amp; Addiction</td>
<td>3</td>
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<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
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</table>
Choose one of the following options:  

1. **GRN 280A**  
   CE: Gerontology Internship  
2. **FT 280**  
   Cooperative Education: Fitness Technology  
   & **GRN 280A** and CE: Gerontology Internship

**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>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<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>
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</tr>
<tr>
<td>AD 154</td>
<td>Client Record Management and Addiction</td>
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<tr>
<td>AD 156</td>
<td>Ethical and Professional Issues</td>
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<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
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<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
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</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
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<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
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<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>
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<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
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<tr>
<td>GRN 166</td>
<td>Nature Activities for Senior Living</td>
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<tr>
<td>GRN 170</td>
<td>Resident Assistant I Training</td>
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<td>GRN 171</td>
<td>Resident Assistant II Training</td>
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<tr>
<td>GRN 172</td>
<td>Adult Care Home Training</td>
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<td>GRN 175</td>
<td>The Aging Mind</td>
<td>4</td>
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<tr>
<td>GRN 233</td>
<td>Supporting End of Life</td>
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<tr>
<td>GRN 235</td>
<td>Introduction to Dementia Care</td>
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<td>GRN 236</td>
<td>Dementia Care Practice</td>
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<tr>
<td>GRN 237</td>
<td>End of Life Therapies</td>
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<td>GRN 239</td>
<td>End of Life Practices</td>
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<td>GRN 240</td>
<td>Care and Service Coordination</td>
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<td>GRN 245</td>
<td>Introduction to Guardianship in Oregon</td>
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<td>GRN 265</td>
<td>Activity Professional Training 1</td>
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<td>GRN 247</td>
<td>Applied Legal and Policy Issues in Aging</td>
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<tr>
<td>HE 254</td>
<td>Weight Management and Personal Health</td>
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<td>HE 255</td>
<td>Film and Public Health</td>
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<td>HE 264</td>
<td>Health, Food Systems, and the Environment</td>
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<td>HE 278</td>
<td>Human Health and the Environment</td>
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<tr>
<td>SOC 219</td>
<td>Religion &amp; Culture: Social Dimensions</td>
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<tr>
<td>PSY 213</td>
<td>Introduction to Behavioral Neuroscience</td>
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<td>PSY 239</td>
<td>Introduction to Abnormal Psychology</td>
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<td>PSY 216</td>
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<td>Introduction to Environmental Sociology</td>
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<td>GRN 266</td>
<td>Activity Professional Training 2</td>
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<td>GRN 267</td>
<td>Introduction to Professional Therapeutic Horticulture</td>
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<td>GRN 268</td>
<td>Techniques &amp; Adaptive Strategies in Therapeutic Horticulture</td>
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<td>GRN 269</td>
<td>Therapeutic Horticulture Skills I</td>
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<td>GRN 270</td>
<td>Therapeutic Horticulture Programming for Adults &amp; Children</td>
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<tr>
<td>GRN 271</td>
<td>Therapeutic Horticulture Skills II</td>
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<td>GRN 272</td>
<td>Therapeutic Garden Design, Maintenance &amp; Programming</td>
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<tr>
<td>GRN 273</td>
<td>First Aid &amp; CPR/AED Professional Rescuers/Healthcare Providers</td>
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<tr>
<td>HE 113</td>
<td>Women's Health</td>
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<td>HE 212</td>
<td>Men's Health</td>
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<td>HE 213</td>
<td>Stress and Human Health</td>
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<td>HE 242</td>
<td>Personal Health</td>
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<td>HE 250</td>
<td>Community and Public Health Issues</td>
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<tr>
<td>HE 251</td>
<td>First Aid - Basics and Beyond</td>
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<td>HE 252</td>
<td>Health and Fitness for Life and Health and Fitness for Life Lab</td>
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<tr>
<td>HE 295</td>
<td>Medical Terminology</td>
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<tr>
<td>&amp; PE 295</td>
<td>Psychology and Human Relations</td>
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<tr>
<td>MP 111</td>
<td>Introduction to Psychology - Part 1</td>
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<td>PSY 201A</td>
<td>Introduction to Psychology - Part 2</td>
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<td>Introduction to Personality</td>
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<td>PSY 215</td>
<td>Human Development</td>
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<td>PSY 222</td>
<td>Family &amp; Intimate Relationships</td>
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<td>PSY 231</td>
<td>Human Sexuality</td>
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<td>Sociology in Everyday Life</td>
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<td>SOC 205</td>
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<td>SOC 206</td>
<td>Social Problems</td>
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<td>SOC 213</td>
<td>Diversity in the United States</td>
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<tr>
<td>SOC 218</td>
<td>Sociology of Gender</td>
<td>4</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111E</td>
<td>Beginning Website Creation: Expression Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</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 216</td>
<td>Beginning Word</td>
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<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
</tbody>
</table>
PROGRAMS & DISCIPLINES

CAS 231  Publisher 2 3
CAS 232  Desktop Publishing: InDesign 3

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

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Activity Assistant (p. 113)
Activity Consultant (p. 113)
Activity Director (p. 113)
Advanced Behavioral and Cognitive Care (p. 113)
End of Life Care and Support (p. 113)
Gerontology (p. 114)
Horticultural Therapy (p. 115)

ACTIVITY ASSISTANT: CAREER PATHWAY CERTIFICATE
Minimum 25 credits. The Gerontology Activity Assistant Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

GRN 165  Activity Director Training 2
GRN 280A  CE: Gerontology Internship 1
GRN 280B  Cooperative Education: Fitness Technology 1
GRN 282  Gerontology Professional Seminar 2
Choose one of the following:
HE 250  Personal Health
HE 295  Health and Fitness for Life
& PE 295  and Health and Fitness for Life Lab
SOC 223  Social Gerontology/Sociology of Aging 4
WR 121  English Composition 4

Total Credits 25

1 Certificate candidates who have related work experience with aging adults may petition to substitute 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 37 credits. The Gerontology Activity Director Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

GRN 165  Activity Director Training 2
GRN 181  Exploring the Field of Aging 2
GRN 265  Activity Professional Training 1 3
GRN 266  Activity Professional Training 2 3
GRN 280A  CE: Gerontology Internship 1
GRN 280B  Cooperative Education: Fitness Technology
GRN 280B  Gerontology Internship Seminar 1
GRN 282  Gerontology Professional Seminar 2
Choose one of the following:
HE 250  Personal Health
HE 295  Health and Fitness for Life
& PE 295  and Health and Fitness for Life Lab
SOC 223  Social Gerontology/Sociology of Aging 4
SOC 231  Sociology of Health & Aging 4
SOC 232  Death and Dying: Culture and Issues 4
or SOC 234  Death: Crosscultural Perspectives
WR 121  English Composition 4

Total Credits 37

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

ADVANCED BEHAVIORAL AND COGNITIVE CARE: CAREER PATHWAY CERTIFICATE
Minimum 33 credits. The Gerontology Advanced Behavioral and Cognitive Care Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

AD 105  Aging & Addiction 3
GRN 175  The Aging Mind 1
GRN 181  Exploring the Field of Aging 2
GRN 235  Introduction to Dementia Care 3
GRN 236  Dementia Care Practice 1
GRN 240  Care and Service Coordination 3
GRN 245  Introduction to Guardianship in Oregon 1
GRN 280A  CE: Gerontology Internship 1
GRN 280B  Gerontology Internship Seminar 1
GRN 282  Gerontology Professional Seminar 2
SOC 223  Social Gerontology/Sociology of Aging 4
SOC 231  Sociology of Health & Aging 4
SOC 232  Death and Dying: Culture and Issues 4
or SOC 234  Death: Crosscultural Perspectives

Total Credits 33

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

END OF LIFE CARE AND SUPPORT: CAREER PATHWAY CERTIFICATE
Minimum 37 credits. The Gerontology End of Life Care and Support Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

AD 105  Aging & Addiction 3
GRN 175  The Aging Mind 1
GRN 181  Exploring the Field of Aging 2
GRN 235  Introduction to Dementia Care 3
GRN 236  Dementia Care Practice 1
GRN 240  Care and Service Coordination 3
GRN 245  Introduction to Guardianship in Oregon 1
GRN 280A  CE: Gerontology Internship 1
GRN 280B  Gerontology Internship Seminar 1
GRN 282  Gerontology Professional Seminar 2
SOC 223  Social Gerontology/Sociology of Aging 4
SOC 231  Sociology of Health & Aging 4
SOC 232  Death and Dying: Culture and Issues 4
or SOC 234  Death: Crosscultural Perspectives

Total Credits 37

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.
In order to meet the credit minimum for the degree requirements, some courses may count toward electives or General Education, but not both.

**AD 101** Alcohol Use and Addiction 3
**AD 102** Drug Use and Addiction 3
**AD 154** Client Record Management and Addiction 3
**AD 156** Ethical and Professional Issues 3
**BA 101** Introduction to Business 4
**COMM 111** Public Speaking 4
**FT 102** Injury Prevention & Management 3
**GRN 131** Hospice Basics 1
**GRN 181** Exploring the Field of Aging 2
**GRN 233** Supporting End of Life 4
**GRN 237** End of Life Therapies 1
**GRN 239** End of Life Practices 3

**GRN 240** Care and Service Coordination 3
**GRN 245** Introduction to Guardianship in Oregon 1
**GRN 280A** CE: Gerontology Internship 1
**GRN 247** Applied Legal and Policy Issues in Aging 2
**GRN 280B** Gerontology Internship Seminar 1
**GRN 282** Gerontology Professional Seminar 2
**PHL 207** Ethics and Aging 4
**SOC 223** Social Gerontology/Sociology of Aging 4
**SOC 231** Sociology of Health & Aging 4
**SOC 232** Death and Dying: Culture and Issues 4

Total Credits 44

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

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

**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.

**AD 101** Alcohol Use and Addiction 3
**AD 102** Drug Use and Addiction 3
**AD 154** Client Record Management and Addiction 3
**AD 156** Ethical and Professional Issues 3
**BA 101** Introduction to Business 4
**COMM 111** Public Speaking 4
**FT 102** Injury Prevention & Management 3

Total Credits 44

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

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

**GERONTOLOGY CERTIFICATE**

Minimum 44 credits. The Gerontology Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.

**GRN 181** Exploring the Field of Aging 2
**GRN 280A** CE: Gerontology Internship 4
**FT 280** Cooperative Education: Fitness Technology 1
**GRN 282** Gerontology Professional Seminar 2
**PSY 236** Psychology of Adult Development and Aging 4
**SOC 223** Social Gerontology/Sociology of Aging 4
**SOC 231** Sociology of Health & Aging 4
**SOC 232** Death and Dying: Culture and Issues 4
**WR 121** English Composition 4

**Grn 240** Gerontology CAS Electives 3
**Grn 245** Gerontology Program Electives 8

Total Credits 47

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

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

**PORTLAND COMMUNITY COLLEGE  2014-2015**

**GRN 131** Hospice Basics 1
**GRN 181** Exploring the Field of Aging 2
**GRN 233** Supporting End of Life 4
**GRN 237** End of Life Therapies 1
**GRN 239** End of Life Practices 3

Total Credits 37

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

**PORTLAND COMMUNITY COLLEGE  2014-2015**
PROGRAMS & DISCIPLINES

COMMUNICATIONS TECHNOLOGY BUILDING, (CT) ROOM 102
SYLVANIA CAMPUS

GRAPHIC DESIGN

PORTLAND COMMUNITY COLLEGE ■ 2014-2015

PSY 231 Human Sexuality
PSY 232 Human Sexuality
SOC 204 Sociology in Everyday Life
SOC 205 Social Change in Societies
SOC 206 Social Problems
SOC 213 Diversity in the United States
SOC 218 Sociology of Gender

GERONTOLOGY CAS ELECTIVES

CAS 111D Beginning Website Creation: Dreamweaver
CAS 111E Beginning Website Creation: Expression Web
CAS 133 Basic Computer Skills/Microsoft Office
CAS 140 Beginning Access
CAS 170 Beginning Excel
CAS 216 Beginning Word
CAS 217 Intermediate Word
CAS 231 Publisher
CAS 232 Desktop Publishing: InDesign

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

HORTICULTURAL THERAPY: CAREER PATHWAY CERTIFICATE

Minimum 37 credits. The Horticultural Therapy Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree

GRN 165 Activity Director Training
GRN 235 Introduction to Dementia Care
GRN 236 Dementia Care Practice
GRN 267 Introduction to Professional Therapeutic Horticulture
GRN 268 Techniques & Adaptive Strategies in Therapeutic Horticulture
GRN 269 Therapeutic Horticulture Skills I
GRN 270 Therapeutic Horticulture Programming for Adults & Children
GRN 271 Therapeutic Horticulture Skills II
GRN 272 Therapeutic Garden Design, Maintenance & Programming
GRN 273 Interior Plants
GRN 280A CE: Gerontology Internship
GRN 280B Gerontology Internship Seminar
GRN 282 Gerontology Professional Seminar
PSY 236 Psychology of Adult Development and Aging
SOC 223 Social Gerontology/Sociology of Aging

Total Credits 37

1 Certificate candidates who have related work experience with aging adults may petition to substitute one credit for every 70 hours worked toward the required internship credits, up to a total of three credits.

GRAPHIC DESIGN

SYLVANIA CAMPUS
COMMUNICATIONS TECHNOLOGY BUILDING, (CT) ROOM 102
971-722-4160, 971-722-4790, 971-722-4264

www.pcc.edu/gd

CAREER AND PROGRAM DESCRIPTION

Graphic design is the art, discipline and profession of visual communication. By combining images, words and ideas graphic designers focus information toward an audience to achieve a desired goal. Graphic designers blend artistic talent, typography and computer knowledge to create advertisements, brochures, logos and identity systems, newsletters, catalogs, signage systems, web pages, magazines and books. The two-year program at PCC prepares the student for entry-level work in the highly competitive and deadline-oriented field of graphic design. Class work is designed to simulate industry situations and standards.

DEGREE AND CERTIFICATE OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

GRAPHIC DESIGN

PREREQUISITES AND REQUIREMENTS

Students are strongly encouraged to attend one of the graphic design orientation meetings held throughout the year. Please check www.pcc.edu/gd for times and dates. Students starting the program are required to test into WR 121 or above on the Writing placement test, and MTH 65 or above on the math placement test as minimum entry requirements.

The program begins fall term when students must successfully complete GD 120, GD 114 and GD 101 with a B or better before taking other first-year graphic design courses. Please note that some courses are only offered once during the year and enrollment is limited. First term design courses are taught in a hands-on, non-computer format. Beginning second term, design study is integrated with computer technology. In all classes, students study the principles and practices used to carry an idea from thumbnail sketches through layout and completed design. Both two- and three-dimensional design concepts in print and digital format are explored. All second year work is directed at building a professional level portfolio.

Full-time day students can complete the program in six terms. Students should contact the Graphic Design student support specialist at 971-722-4160 to consult for course planning. After completing the AAS degree students are eligible to transfer to Portland State University.

GRAPHIC DESIGN AAS DEGREE

Minimum 93 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

GRAPHIC DESIGN DEGREE CREDIT SUMMARY

GD 58
ART 13
BA 3
CAS 3
COMM 4
WR 4
Remaining General Education 8
Total Credits 93

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.
First Term
ART 131A Drawing I 3
GD 101 Macintosh for Graphic Designers 1
GD 114 Introductory Typography 3
GD 120 Graphic Design I 4
WR 121 English Composition 4
General Education
Second Term
COMM 111* Public Speaking 4
GD 116 Intermediate Typography 3
GD 122 Graphic Design 2 3
GD 140 Digital Page Design 1 3
GD 150 Digital Illustration I 3
Third Term
ART 214 History of Graphic Design 4
GD 124 Graphic Design 3 3
GD 141 Digital Page Design 2 3
GD 151 Digital Illustration 2 3
GD 160 Digital Imaging I 3
Note: All first year graphic design and art courses must be completed with a B or better before admission to second year courses.
Fourth Term
ART 270A Printmaking I 3
GD 221 Graphic Design 4 3
GD 244 Print Strategies 3
GD 249 Design Studio 3
or GD 280A Cooperative Education: Graphic Design 3
GD 260 Digital Imaging 2 3
Fifth Term
CAS 111D Beginning Website Creation: Dreamweaver 3
GD 222 Graphic Design 5 3
GD 228 Professional Graphic Design Practices 3
GD 239 Illustration for Graphic Designers 3
GD 242 Combined Graphic Programs 3
Sixth Term
BA 239 Advertising 3
or BA 223 Principles of Marketing 3
GD 229 Portfolio Preparation 3
GD Art Elective 3
General Education
All General Education courses must be completed by end of this term.

Total Credits: 93

* Could be used as General Education

GRAPHIC DESIGN DEGREE ART ELECTIVES
ART 140A Digital Photography I 3
ART 204 History of Western Art 4
ART 204H History of Western Art: Honors 4
ART 205 History of Western Art 4
ART 205H History of Western Art: Honors 4
ART 206 History of Western Art 4
ART 206H History of Western Art: Honors 4
ART 271A Printmaking II 3

Cooperative work experience and internship placements are available. These are highly recommended to prepare student for the graphic design industry.

HEALTH STUDIES

Cascade Campus
Jackson Hall (JH), Room 218
971-722-5076

Rock Creek Campus
Building 3, Room 201
971-722-7248

Southeast Campus
Student Commons (SCOM), Room 214
971-722-6146

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

www.pcc.edu/programs/health/

DESCRIPTION
Health is the study of the health and well-being of the individual and community from a multi-dimensional perspective. The study of health connects the individual, group and environment as it examines both disease prevention and wellness promotion which serve to make possible our highest enjoyment of life, greatest constructive work, and best service to the world.

At PCC, health course offerings range from general health overview courses in personal health, community health, and health and fitness to specialty courses in stress, environment, children’s, men’s, and women’s health, plus several categories of and first aid and CPR courses. In addition to individual courses, a Health Studies Award is available. Additional information on the Health Studies Award may be found in the Focus Awards area of the catalog.

LACTATION EDUCATION AND CONSULTANT PROGRAM

PCC’s Lactation Education and Consultant Program provides comprehensive lactation training for students who want to improve their lactation skills, and for students who want to become certified as International Board Certified Lactation Consultants (IBCLC) by the International Board of Lactation Consultant Examiners (IBLCE).

The PCC Lactation Education and Consultant Program offers high quality lactation training that combines the unique experience of in-person classes and online education. PCC is committed to attracting applicants from racially, culturally and ethnically diverse communities who aspire to become IBCLCs.

DEGREES AND CERTIFICATES OFFERED
LESS THAN ONE-YEAR CERTIFICATE

Lactation Consultant Lactation Education

PREREQUISITES AND REQUIREMENTS

The Lactation Education and Consultant Program (LECP) is a limited entry program. A student must be accepted into the LECP to register for lactation courses. Students must also have completed:

1. BI 101 or BI 112 or BI 211 or equivalent
2. BI 231 & 232 or equivalent
3. PSY 101 or PSY 201A or PSY 215 or PSY 222 or SP/COMM 214 or equivalent
4. HEC 226 or equivalent
5. FN 225 or equivalent  
6. MTH 243 or equivalent

In addition to the prerequisites listed above, before beginning the LECP, students are required to show documentation of knowledge in the following areas:

• Basic Life Support  
• Medical Documentation  
• Medical Terminology  
• Occupational safety, including security, for health professionals  
• Professional ethics for health professionals (e.g. Code of Ethics)  
• Universal safety precautions and infection control

The prerequisites and requirements may be waived if educated in one of the professions on the International Board Lactation Consultant Examiners Recognized Health Professions List. Recognized Health Professionals include Dentist, Dietician, Midwife, Nurse, Occupational Therapist, Pharmacist, Physical Therapist or Physiotherapist, Physician or Medical Doctor, Speech Pathologist or Therapist.

Students may demonstrate completion of the prerequisites by submitting a copy of their license, registration, transcript, diploma or degree.

LACTATION CONSULTANT LESS THAN ONE-YEAR CERTIFICATE

Minimum 27 credits. Students must meet all certificate requirements.

LACTATION CONSULTANT CERTIFICATE CREDIT SUMMARY

| LEC | 23 |
| LEC Elective | 4 |
| Total Credits | 27 |

COURSE OF STUDY

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>LEC 201</td>
<td>Human Lactation and Breastfeeding 1</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>LEC 202</td>
<td>Human Lactation and Breastfeeding 2</td>
<td>4.5</td>
</tr>
<tr>
<td>Second Term</td>
<td>LEC 271</td>
<td>Clinical Practicum 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>LEC 275</td>
<td>Practicum Seminar 1</td>
<td>1</td>
</tr>
<tr>
<td>Third Term</td>
<td>LEC 272</td>
<td>Clinical Practicum 2</td>
<td>4</td>
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<td></td>
<td>LEC 276</td>
<td>Practicum Seminar 2</td>
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<tr>
<td>Fourth Term</td>
<td>LEC 273</td>
<td>Clinical Practicum 3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>LEC 277</td>
<td>Practicum Seminar 3</td>
<td>2</td>
</tr>
</tbody>
</table>

| Lactation Education Elective | 4 |
| Total Credits               | 27 |

LACTATION EDUCATION LESS THAN ONE-YEAR CERTIFICATE

Minimum 13 credits. Students must meet all certificate requirements.

LACTATION EDUCATION CERTIFICATE CREDIT SUMMARY

| LEC | 9 |
| LEC Elective | 4 |
| Total Credits | 13 |

HEALTH INFORMATION MANAGEMENT

Cascade Campus  
Technology Education Building (TEB), Room 103  
971-722-5667  
www.pcc.edu/him

CAREER AND PROGRAM DESCRIPTION

Health information management (HIM) professionals manage health care data and information resources. The profession encompasses planning, collecting, aggregating, analyzing and disseminating individual patient and aggregate clinical data. HIM professionals serve the health care industry wherever health information is collected, organized, and analyzed. HIM professionals work in a variety of health care settings, payer organizations, research and policy agencies and accounting and legal firms.

HIM professionals bring unique skills to the health care industry such as managing health records and health information systems, summarizing data into useful information, protecting the privacy and security of patient health information and assisting providers in understanding data flow and reporting requirements within the context of dynamic rules, regulations and guidelines.

The PCC program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), in cooperation with the Council on Accreditation of the American Health Information Management Association. Graduates are eligible to take the national certification examination given through the American Health Information Management Association.

The program begins fall term only. Students must receive a C or better in all program required courses. The program is designed to correlate classroom and lab experience with practical experience in health care facilities. The lecture and lab portion of the program is offered entirely through distance learning.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Health Information Management

PREREQUISITES AND REQUIREMENTS

1. Completion of WR 121, MTH 65, MP 111 and CAS 133 with a C or better.  
2. Students are encouraged to meet with the Cascade Allied Health Admissions Coordinator.  
3. Complete the program application and submit unofficial transcripts from any college attended other than PCC.
4. After admission to the program, but before beginning practicum, students may be required to complete some or all of the following: criminal background check, proof of immunizations, and a ten-panel drug screening. There will be a cost to the student associated with completing this requirement.

5. Once admitted, students are strongly encouraged to complete program advising with a Health Information Management program advisor.

6. Students must be able to provide their own transportation to clinical facilities.

HEALTH INFORMATION MANAGEMENT AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

HEALTH INFORMATION MANAGEMENT DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIM 110</td>
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<tr>
<td>HIM 120</td>
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<tr>
<td>HIM 128</td>
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<td>HIM 182</td>
<td>3</td>
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<td>HIM 105</td>
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<td>HIM 107</td>
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<td>HIM 121</td>
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<td>HIM 129</td>
<td>4</td>
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<td>HIM 131</td>
<td>5</td>
</tr>
<tr>
<td>HIM 136</td>
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<td>COMM 100* or COMM 111</td>
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<td>Total General Education</td>
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<td>Total Credits</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>
<tr>
<td>HIM 110 Health Record Content 1</td>
<td>4</td>
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<tr>
<td>HIM 120 Health Record Content 1 Lab</td>
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<tr>
<td>HIM 128 Anatomy &amp; Physiology for Health Information Management 1</td>
<td>4</td>
</tr>
<tr>
<td>HIM 182 Health Care Delivery Systems</td>
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</tr>
<tr>
<td>Total Credits</td>
<td>92</td>
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</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 and Ethical Aspects of Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>HIM 129 Anatomy &amp; Physiology for Health Information Management 2</td>
<td>4</td>
</tr>
<tr>
<td>COMM 100* or COMM 111 Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>Total General Education</td>
<td>76</td>
</tr>
<tr>
<td>Total Credits</td>
<td>92</td>
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</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</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>COMM 100* or COMM 111 Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>Total General Education</td>
<td>76</td>
</tr>
<tr>
<td>Total Credits</td>
<td>92</td>
</tr>
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**Fourth Term**

<table>
<thead>
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<th>Course</th>
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<tr>
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</tr>
<tr>
<td>HIM 270 ICD Basic Coding</td>
<td>4</td>
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<tr>
<td>HIM 281 Data Management and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HIM 283 Health Information Systems</td>
<td>4</td>
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<tr>
<td>HIM 286 Data Management and Analysis Lab</td>
<td>2</td>
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<tr>
<td>Total General Education</td>
<td>76</td>
</tr>
<tr>
<td>Total Credits</td>
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</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIM 271 Quality Improvement in Healthcare</td>
<td>3</td>
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<tr>
<td>HIM 273 ICD Intermediate Coding</td>
<td>4</td>
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<td>HIM 274 Quality Improvement in Healthcare Lab</td>
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<tr>
<td>Total General Education</td>
<td>76</td>
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<tr>
<td>Total Credits</td>
<td>92</td>
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</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIM 276 ICD Intermediate Lab</td>
<td>2</td>
</tr>
<tr>
<td>HIM 282 Healthcare Statistics</td>
<td>3</td>
</tr>
<tr>
<td>HIM 285 Healthcare Financing and Compliance</td>
<td>3</td>
</tr>
<tr>
<td>Total General Education</td>
<td>76</td>
</tr>
<tr>
<td>Total Credits</td>
<td>92</td>
</tr>
</tbody>
</table>

**Seventh Term**

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>HIM 272 Health Information Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM 275 CPT Coding</td>
<td>3</td>
</tr>
<tr>
<td>HIM 277 Health Information Management Lab</td>
<td>2</td>
</tr>
<tr>
<td>HIM 290 HIM Teams and Training</td>
<td>3</td>
</tr>
<tr>
<td>HIM 293 Health Information Directed Practice</td>
<td>2</td>
</tr>
<tr>
<td>Total General Education</td>
<td>76</td>
</tr>
<tr>
<td>Total Credits</td>
<td>92</td>
</tr>
</tbody>
</table>

* Could be used as General Education.

HISTORY

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

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

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

Sylvania Campus
Social Science Building (SS), Room 217
971-722-4289

www.pcc.edu/programs/history/

DESCRIPTION

History is one of the most important subjects that one can study because it touches every academic subject. The study of history enables individuals to think historically and to analyze cause and effect relationships in human affairs. Through the analysis and interpretation of past events, historians provide insights on current events as well as on the broader human condition. The more that people understand about their past, the greater their perspective becomes and the more likely the present is to make sense. Historians occupy positions in a wide variety of fields: for example, high school and college instruction, research in business and industry, government, journalism, law, library, professional writing, and a host of other occupations that require skills developed in the study of history, such as critical thinking, research and writing.

PCC History offers survey courses in American history, western civilization, and Asian history. 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 courses are offered every term, but history courses are non-sequential and may be taken in any term and in any order. All are transferable to four-year universities.

HONORS PROGRAM (HON)

Honors Program (all campuses)
971-722-5009 or 971-722-4081
http://www.pcc.edu/programs/honors/

DESCRIPTION

The Honors Program at PCC offers motivated students the opportunity to participate in classes and enrichment activities designed to challenge them to reach their highest potential. The program endeavors to create a community of peer scholars working toward their academic goals. The program includes coursework,
extracurricular activities, and the opportunity to develop a transfer portfolio.

The bulk of an honors student’s program will be taken in designated general education courses, such as WR 121H or COMM 111H. Students take HON 101 early in their program which develops a community and provides leadership opportunities as they work toward the final course involving the completion of a capstone project.

Honors courses are open to all PCC students having a minimum GPA of 3.25 whether or not they are admitted to the program. Full membership in the program, however, offers significant benefits for motivated students. Please contact a program representative for further information.

**HUMANITIES**

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

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

**DESCRIPTION**

Studying the humanities provides individuals with opportunities to explore the human experience through a variety of windows such as art and architecture, philosophy, literature, music, history and languages. Humanities students examine and interpret works from the viewpoint of several disciplines to better understand the influence of cultural values and world views, forms of political and social order, basis and impact of gender roles and effect of historic and environmental events on how individuals and societies perceive and project themselves. Humanities students could find jobs in three broad categories: academics, media and writing. Some specifics include teaching, business theorists, archaeologists, literary critics, cinematography, television and radio personalities, writers, journalists and talent agents; essentially any field that requires an understanding of the “human condition.”

At PCC, the humanities program includes a broad-based introductory course, sequences in technology, African Cultures and Leadership.

**INTERIOR DESIGN**

Sylvania Campus
Science and Technology Building (ST), Room 208
971-722-4030

www.pcc.edu/interiors

**CAREER AND PROGRAM DESCRIPTION**

Interior designers specialize in creating uniquely defined environments that cater to the special needs and functional requirements of its user. Students in this program learn to apply design principles and techniques to the professional planning and furnishing of residential interiors.

PCC’s Interior Design program is the only two-year degree program in residential interior design available in Oregon and Southern Washington. Our graduates are sought by employers for their unique abilities: adept design problem solving, ability to draw from historical traditions, and effective communication skills. The curriculum includes a range of courses from Interior Design, Architecture, Art, and Business. Students gain hands-on experience through an internship program. Articulation agreements are in place with select 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 and retail sales business. Emphasis is placed on a broad scope of courses which are application-oriented. Students must finish the Interior Furnishings Certificate before or concurrently with this option. Specializations within the program of study also include Design for Accessibility and Aging in Place, Kitchen and Bath Design, and Sustainable Building Design.

**DEGREES AND CERTIFICATES OFFERED**

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Interior Design

**ONE-YEAR CERTIFICATE**

Design for Accessibility and Aging in Place
Kitchen and Bath

**LESS THAN ONE-YEAR CERTIFICATE**

Sustainable Design

**LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE**

Interior Furnishings

**PREREQUISITES AND REQUIREMENTS**

College level reading and writing skills and basic math skills are required. Individual courses may have prerequisites which are included in the course description. A “C” or better is required in all coursework in this major. Pass/No Pass grades are not accepted for interior design coursework.

**INTERIOR DESIGN AAS DEGREE**

Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. 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>22</td>
</tr>
<tr>
<td>ART</td>
<td>3</td>
</tr>
<tr>
<td>BA</td>
<td>3</td>
</tr>
<tr>
<td>COMM</td>
<td>4</td>
</tr>
<tr>
<td>MTH</td>
<td>4</td>
</tr>
<tr>
<td>ID Degree Electives</td>
<td>9</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
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<td><strong>Total Credits</strong></td>
<td><strong>103</strong></td>
</tr>
</tbody>
</table>

**COURSE OF STUDY**

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

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>Graphic Communication for Designers</td>
</tr>
<tr>
<td>General Education</td>
<td>8</td>
</tr>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
</tr>
<tr>
<td>ART 116*</td>
<td>Basic Design - Color Foundations</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
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</tr>
<tr>
<td>ARCH 200</td>
<td>Principles of Architectural Design</td>
</tr>
<tr>
<td>ID 125</td>
<td>Computer Drafting for Interior Designers</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
</tr>
<tr>
<td>ID 120</td>
<td>Interior Products and Materials I</td>
</tr>
</tbody>
</table>
Third Term
ID 128  Digital Rendering and Presentation 3
ID 132  Planning Interiors 3
ID 236  Lighting Design 3
COMM 111  or COMM 130 Business & Professional Communication
Comm 4

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

Fifth Term
ARCH 121  Structural Systems I 2
ARCH 127  Introduction to Google SketchUp 3
ART 215  History of American Residential Architecture 3
ID 121  Sustainable Materials for Residential Interiors 3
ID 123  History of Furniture-1800 to Present 3
ID 135  Professional Practices for Designers 3
ID Degree Electives 3
ARCH 111  Intro to Residential Construction Documents 3

Sixth Term
ID 234  Advanced Interiors 3
ID 232  Business Communication for Interior Design 3
ID Degree Electives 6
General Education 4
Total Credits: 102

* COMM 130 and COMM 111 could be used as General Education

INTERIOR DESIGN DEGREE ELECTIVES
ARCH 136  Intermediate AutoCAD 3
ART 115  Basic Design - 2D Foundations 3
ART 116  Basic Design - Color Foundations 3
ART 131A  Drawing I 3
BCT 244  Kitchen and Bath Cabinet Installation 2
ID 225  CAD for Kitchen and Bath Design 1
ID 238  Advanced Kitchen and Bath Planning 3
ID 280A  Cooperative Education: Kitchen and Bath 2-6

ONE-YEAR CERTIFICATE
Design for Accessibility and Aging in Place (p. 120)
Kitchen and Bath (p. 120)

LESS THAN ONE-YEAR CERTIFICATE
Sustainable Design (p. 121)

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE
Interior Furnishings (p. 121)

KITCHEN AND BATH ONE-YEAR CERTIFICATE
Minimum 50 credits. Students must also meet certificate requirements. The Kitchen and Bath Certificate is a related certificate. All courses within the certificate are contained in the Interior Design AAS Degree.

KITCHEN AND BATH CERTIFICATE CREDIT SUMMARY
ID 33
ARCH 12
ART 3
BCT 2
Total Credits

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

Third Term
ARCH 121  Structural Systems I 2
ARCH 132  Residential Building Codes 2
ART 215  History of American Residential Architecture 3
ID 280A  Cooperative Education: Kitchen and Bath 6
Total Credits 50

DESIGN FOR ACCESSIBILITY AND AGING IN PLACE ONE-YEAR CERTIFICATE
Minimum 50 credits. Students must also meet comprehensive certificate requirements.

DESIGN FOR ACCESSIBILITY AND AGING IN PLACE CERTIFICATE CREDIT SUMMARY
ID 24
ARCH 7
BCT 3
GRN 4
SOC 12
Total Credits

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
ID 125  Computer Drafting for Interior Designers 3
GRN 181  Exploring the Field of Aging 2
SUSTAINABLE DESIGN LESS THAN ONE-YEAR CERTIFICATE
Minimum 42 credits. Students must also meet comprehensive certificate requirements.

SUSTAINABLE DESIGN CERTIFICATE CREDIT SUMMARY
ID 3
ARCH 24
BCT 3
ESR 4
PHL 4
SOC 4
Total Credits: 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 Introduction to Residential Design 3
ARCH 124 Introduction to Building Systems 3
ARCH 131 Sustainable Building Strategies 4
ESR 171 Environmental Science: Biological Perspectives 4
or ESR 172 Environmental Science: Chemical Perspectives
Total Credits: 42

Second Term
ARCH 224 Active and Passive Building Systems 4
BCT 206 Sustainable Construction Practices 3
ID 121 Sustainable Materials for Residential Interiors 3
PHL 206 Introduction to Environmental Ethics 4
Total Credits: 42

Third Term
ARCH 113 Site Planning 2
ARCH 204 Green Residential Studio 4
ARCH 280 Cooperative Education: Architectural Design and Drafting 4
SOC 228 Introduction to Environmental Sociology 4
Total Credits: 42

INTERIOR FURNISHINGS: CAREER PATHWAY CERTIFICATE
Minimum 41 credits. Students must also meet comprehensive certificate requirements. The Interior Furnishings Certificate Career Pathway. All courses are in the Interior Design AAS Degree.

INTERIOR FURNISHINGS CERTIFICATE CREDIT SUMMARY
ID 27
ARCH 8
ART 3
BA 3
Total Credits: 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
ARCH 124 Introduction to Building Systems 3
BA 238 Sales 3
ID 131 Introduction to Interiors 3
ID 122 History of Furniture-Ancient to 1800 3
Total Credits: 17

Second Term
ARCH 100 Graphic Communication for Designers 3
ART 215 History of American Residential Architecture 3
ID 120 Interior Products and Materials I 3
ID 123 History of Furniture-1800 to Present 3
ID 125 Computer Drafting for Interior Designers 3
Total Credits: 15

Third Term
ID 121 Sustainable Materials for Residential Interiors 3
ID 135 Professional Practices for Designers 3
ID 230 Textiles for Interiors 3
ID 236 Lighting Design 3
Total Credits: 16

JAPANESE
Rock Creek Campus
Building 2, Room 210
971-722-7770

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-8005
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 to develop communicative competence and proficiency in comprehension, speaking, reading, and writing Japanese as well as cultural awareness. Assessment is based on consistent attendance, active student participation, and written and oral assignments.

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

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when material essential for successful completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend.

JOURNALISM

Sylvania Campus
Communications Technology Building (CT), Room 216  
971-722-4204

http://www.pcc.edu/programs/journalism/

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.

LACTATION EDUCATION AND CONSULTANT

See Health Studies (p. 116)

LANDSCAPE TECHNOLOGY

Rock Creek Campus
Building 2, Room 210  
971-722-7770

www.pcc.edu/landscape

CAREER AND PROGRAM DESCRIPTION

Prepare for entry level and supervisory work in landscape construction, landscape management, landscape design, or nursery production. In the construction area, students work with landscape contractors installing landscapes. Those specializing in management work primarily in maintaining existing landscapes both private and public. Landscape designers work with clients and contractors to produce residential design. Upon application to the Landscape Contractors Board and presentation of transcripts and diploma, students completing the Associate of Applied Science Degree in Landscape Technology will be eligible to sit for the Landscape Contractors licensing exam.

Landscape Technology degree classes are designed to develop knowledge and skills in plant care, plant identification, soils, irrigation, 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 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 degree to the State of Oregon Landscape Contractors Board, students completing this degree 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 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 classes are developed to build knowledge and skills in plant identification, soils, irrigation, basic landscape design and construction practices. Required landscape design courses meet the educational requirement for certification with the Association of Professional Landscape Designers. Students are prepared to work in the 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.

Environmental Landscape Management Technology classes will develop skills and knowledge in Landscape Technology, Biology and Environmental Science to prepare students for careers working with natural resources and sustainable landscape technologies. Students who complete the degree will have a broad background in science and the technical skills to construct, maintain and monitor sustainable landscape systems such as bioswales, greenroofs and environmental restoration projects.

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.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Landscape Technology
Landscape Technology: Landscape Construction Option
Landscape Technology: Landscape Design Option
Landscape Technology: Landscape Management Option
Environmental Landscape Management Technology

LESS THAN ONE-YEAR CERTIFICATE

Landscape Service Technician
### PREREQUISITES AND REQUIREMENTS

All landscape students are required to place into RD 115, WR 115, and MTH 60. Check appropriate course descriptions for individual course requirements.

All Landscape Technology courses must be completed with a C or better to meet the requirements for graduation.

### ASSOCIATE OF APPLIED SCIENCE DEGREE

Landscape Technology (p. 123)
Landscape Technology: Landscape Construction Option (p. 123)
Landscape Technology: Landscape Design Option (p. 124)
Landscape Technology: Landscape Management Option (p. 125)
Environmental Landscape Management Technology (p. 125)

### LANDSCAPE TECHNOLOGY AAS DEGREE

Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

### LANDSCAPE TECHNOLOGY DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT</td>
<td>43</td>
</tr>
<tr>
<td>CSS</td>
<td>4</td>
</tr>
<tr>
<td>HOR</td>
<td>18</td>
</tr>
<tr>
<td>MSD</td>
<td>3</td>
</tr>
<tr>
<td>LAT Degree Electives</td>
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</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total Credits</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>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 226</td>
<td>4</td>
<td>Plant Materials - Deciduous</td>
</tr>
<tr>
<td>LAT 111</td>
<td>3</td>
<td>Landscape Construction Practices</td>
</tr>
<tr>
<td>LAT 236§</td>
<td>3</td>
<td>Landscape Math</td>
</tr>
<tr>
<td>LAT 217</td>
<td>3</td>
<td>Landscape Drafting</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 200</td>
<td>4</td>
<td>Soils and Plant Nutrition</td>
</tr>
<tr>
<td>HOR 227</td>
<td>4</td>
<td>Plant Materials - Evergreens</td>
</tr>
<tr>
<td>LAT 104</td>
<td>3</td>
<td>Pesticides</td>
</tr>
<tr>
<td>LAT 109</td>
<td>3</td>
<td>Plant Propagation</td>
</tr>
</tbody>
</table>

#### Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 228</td>
<td>4</td>
<td>Plant Materials - Flowering</td>
</tr>
<tr>
<td>HOR 290</td>
<td>3</td>
<td>Introduction to Landscape Design</td>
</tr>
<tr>
<td>LAT 108</td>
<td>3</td>
<td>Landscape Irrigation I</td>
</tr>
<tr>
<td>LAT 110</td>
<td>3</td>
<td>Grounds Maintenance</td>
</tr>
</tbody>
</table>

#### Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Landscape Technology Electives</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

#### Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 223</td>
<td>3</td>
<td>Site Surveying and Analysis</td>
</tr>
<tr>
<td>LAT 106</td>
<td>4</td>
<td>Basic Horticulture</td>
</tr>
<tr>
<td>Landscape Technology Electives</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

#### Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 243</td>
<td>3</td>
<td>Landscape Business Operations</td>
</tr>
<tr>
<td>LAT 264</td>
<td>3</td>
<td>Landscape Estimating and Bidding</td>
</tr>
</tbody>
</table>

### LANDSCAPE CONSTRUCTION AAS DEGREE

Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

### LANDSCAPE CONSTRUCTION DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT</td>
<td>47</td>
</tr>
<tr>
<td>CSS</td>
<td>4</td>
</tr>
<tr>
<td>HOR</td>
<td>15</td>
</tr>
<tr>
<td>MSD</td>
<td>3</td>
</tr>
<tr>
<td>Landscape Construction Electives</td>
<td>6</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>91</strong></td>
</tr>
</tbody>
</table>

### COURSE OF STUDY

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

#### First Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOR 226</td>
<td>4</td>
<td>Plant Materials - Deciduous</td>
</tr>
</tbody>
</table>

---

§ Course cannot be substituted with another course.

1 Students with one year documented work experience may take an additional 6 credits of General Education or landscape electives in place of cooperative work experience. Arrange with the landscape department chair.
<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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**LANDSCAPE DESIGN AAS DEGREE**

Minimum 93 credits. Students must meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

**LANDSCAPE DESIGN DEGREE CREDIT SUMMARY**

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**COURSE OF STUDY**

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

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§ Course cannot be substituted with another course.

1 Students with one year documented work experience in landscape construction may take an additional 6 credits of LAT elective courses in lieu of cooperative work experience. Arrange with landscape department chair.

**LANDSCAPE CONSTRUCTION ELECTIVES**

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<td>Summer Annuals &amp; Perennials</td>
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<td>Pesticides</td>
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<td>Plant Propagation</td>
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PROGRAMS & DISCIPLINES

LANDSCAPE MANAGEMENT DEGREE ELECTIVES

HOR 255  Spring Annuals and Perennials  3
HOR 266  Interior Plants  3
HOR 272  Summer Annuals & Perennials  3
HOR 285  Permaculture Design  7
LAT 104  Pesticides  3
LAT 109  Plant Propagation  3
LAT 211  Landscape Construction Practices II  3
LAT 225  Water Gardens  3
LAT 232  Landscape Irrigation II  4
LAT 235  Tree Care-Fall  3
LAT 240  Tree Care-Spring  3
LAT 241  Turfgrass Cultural Practices  3
LAT 250  Plant Diseases, Insects and Weed Identification  3
LAT 262  Native Plants of Oregon  3
LAT 275  Introduction to Landscape Night Lighting  3
LAT 278  Oregon LCP Exam Preparation  3

LANDSCAPE MANAGEMENT AAS DEGREE

Minimum 93 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

LANDSCAPE MANAGEMENT CERTIFICATE CREDIT SUMMARY

LAT 46
CSS 4
HOR 18
MSD 3
Landscape Management Electives 6
General Education 16
Total Credits 93

COURSE OF STUDY

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

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Total Credits: 93

ENVIRONMENTAL LANDSCAPE MANAGEMENT TECHNOLOGY AAS DEGREE

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of eight credits of General Education. Math/computation competency is met through the...
courses in the program of study indicated with a § symbol. Student should consult with program advisors for course planning.

ENVIRONMENTAL LANDSCAPE MANAGEMENT
CREDIT SUMMARY

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

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Fifth Term

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Sixth Term

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<td>LAT 264</td>
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Seventh Term

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<td>LAT 250</td>
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Eighth Term

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<td>LAT 280A §</td>
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Total Credits: 92

§ Course cannot be substituted for another course.
1 Students with one year documented work experience in landscape management may take an additional 6 credits of elective courses in lieu of cooperative work experience. Arrange with landscape department chair.

ENVIRONMENTAL LANDSCAPE DEGREE ELECTIVES

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<td>LAT 232</td>
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### Landscape Service Technician Less Than One-Year Certificate

Minimum 41 credits. Students must meet all certificate requirements. The Landscape Service Technician Certificate is a related certificate. All courses are contained in the Landscape Technology AAS Degree.

#### Landscape Service Technician Certificate Credit Summary

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<td>Turfgrass Cultural Practices</td>
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<td>LAT 271</td>
<td>Computer Aided Landscape Design</td>
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<td>LAT 273</td>
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<td>LAT 275</td>
<td>Introduction to Landscape Night Lighting</td>
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<td>LAT 278</td>
<td>Oregon LCP Exam Preparation</td>
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<td>Plant Materials - Deciduous</td>
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<tr>
<td>HOR 227</td>
<td>Plant Materials - Evergreens</td>
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<td>HOR 228</td>
<td>Plant Materials - Flowering</td>
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<td>HOR 255</td>
<td>Spring Annuals and Perennials</td>
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<td>Interior Plants</td>
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<td>Summer Annuals &amp; Perennials</td>
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<td>LAT 104</td>
<td>Pesticides</td>
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<td>LAT 108</td>
<td>Landscape Irrigation I</td>
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#### First Term Credits

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<td>Landscape Construction Practices</td>
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<td>LAT 236</td>
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<tr>
<td>HOR 290</td>
<td>Introduction to Landscape Design</td>
<td>3</td>
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<tr>
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## Literature

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

Rock Creek Campus
Building 3, Room 201
971-722-7522 or 971-722-7806

www.pcc.edu/programs/literature/

### Description

Literature classes help students better comprehend cultural complexity as well as help them develop cultural awareness. PCC’s literature program teaches and promotes an understanding of the significance and history of various literatures and fosters an appreciation for the richness and variety of literary texts. Through improving their comprehension and appreciation of written language, students will be more likely to engage actively and effectively in their many communities, as they transfer to universities and/or pursue career technical education. Acknowledging others voices, evaluating authority, recognizing subtle biases and prejudices, integrating the ideas of others with one’s own are all skills essential to active citizenship developed through the study of literature.

The prerequisite for PCC literature courses is WR 115 and RD 115 or equivalent placement test scores.

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. Students interested in writing courses should consult the Writing (p. 162) section of the catalog.

### Machine Manufacturing Technology

Sylvania Campus
Automotive Metals Building (AM), Room 113
971-722-4155, 971-722-4613

www.pcc.edu/programs/machine-manufacturing/

### Career and Program Description

Machinists operate various types of material processing equipment such as lathes, drill presses, milling machines, grinders, computer numerical control (CNC) machines, rapid prototyping, and computer assisted machining (CAM) systems. Machinists may specialize in the operation of one type of machine or work in a shop where they are required to operate several different machines.

The Machine Manufacturing Technology (MMT) program has been developed specifically in a modular self-paced format, allowing the student to attend courses on a schedule they choose (day or evenings). The open exit design of the program allows a student to focus on a course and complete the materials in a matter of days or weeks instead of traditional term-long classroom formats. The program fits the needs of students in that it is designed to be self-paced (students learn at their own speed, taking as many or as few modules as they desire), individualized (courses tailored to students), flexible (students select their own attendance schedules), and open exit (students complete courses whenever the work is done, and they may leave the program when they have met their training goals or needs).

Existing MMT students are given priority enrollment until the final day of the previous term. New students will be admitted after that time until a predetermined enrollment count is reached. Consult a program advisor through the department to help plan a course of study that will allow you to achieve your educational goals.
DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Machine Manufacturing Technology

ONE-YEAR CERTIFICATE

CNC Turning
CNC Milling

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

Manufacturing Technician

PREREQUISITES AND REQUIREMENTS

It is recommended that degree seeking students entering the MMT program have a score of 21 or higher (MTH 20) in the math portion; 42 or higher (WR 90) on the writing portion; and 66 or higher (RD 90) on the reading portion of the COMPASS test. Students whose first language is not English should take the English test through the English for Speakers of Other Languages (ESOL) Department. Students who place into advanced writing and advanced reading are ready to begin machining courses.

MACHINE MANUFACTURING TECHNOLOGY AAS DEGREE

Minimum 106 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

MACHINE MANUFACTURING TECHNOLOGY DEGREE CREDIT SUMMARY

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<td>MCH 105</td>
<td>Blueprint Reading I</td>
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<td>MCH 110</td>
<td>Blueprint Reading II</td>
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<td>MCH 115</td>
<td>Geometric Dimensioning and Tolerancing</td>
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<td>MCH 120</td>
<td>Machine Shop Math §</td>
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<td>MCH 125</td>
<td>Speeds and Feeds</td>
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<td>MCH 130</td>
<td>Machine Shop Trigonometry §</td>
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<td>MCH 135</td>
<td>Basic Measuring Tools</td>
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<td>MCH 145</td>
<td>Layout Tools</td>
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<td>MCH 150</td>
<td>Precision Measuring Tools</td>
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<td>MCH 160</td>
<td>Drilling Machines and Operations</td>
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<td>MCH 175</td>
<td>Band Saws</td>
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<td>MCH 180</td>
<td>Turning Machines and Operations</td>
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<td>Boring on the Lathe</td>
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<td>MCH 195</td>
<td>Threading on the Lathe</td>
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<td>Vertical Milling Machines and Operations</td>
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<td>Surface Grinding Machines and Operations</td>
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<td>MCH 259</td>
<td>CNC Programming-Lathe</td>
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<td>MCH 268</td>
<td>CNC Programming-Mill</td>
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§ Course cannot be substituted for another course.

MACHINE MANUFACTURING TECHNOLOGY DEGREE ELECTIVES

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<td>Occupational Health and Safety</td>
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<td>MCH 102</td>
<td>Introduction to Manufacturing</td>
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<td>MCH 121</td>
<td>Manufacturing Processes I</td>
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<td>MCH 123</td>
<td>Sheet Metal Fabrication</td>
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<td>MCH 157</td>
<td>Project Machine Technology I</td>
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<td>MCH 158</td>
<td>Project Machine Technology II</td>
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<td>Horizontal Milling Machines</td>
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<td>Coordinate Measuring Machine Operation</td>
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<td>CNC Grinder Operation</td>
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<td>Tool Sharpening</td>
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<td>Cutting Tool Technology</td>
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<td>Metallurgy</td>
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<td>MCH 262</td>
<td>CNC Conversational Controls</td>
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<td>Advanced CNC Programming</td>
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<td>Mastercam Solids</td>
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<td>Cooperative Education: Machine Technology</td>
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<td>CNC Router Operation</td>
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<td>CNC Router Mastercam Programming</td>
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<td>Mastercam Fundamentals Orientation</td>
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<td>Laser Cutting and Engraving Fundamentals</td>
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MACHINE MANUFACTURING TECHNOLOGY ONE-YEAR CERTIFICATE

CNC Turning (p. 129)
CNC Milling (p. 129)

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

Manufacturing Technician (p. 129)
CNC TURNING ONE-YEAR CERTIFICATE
Minimum 48.5 credits. Students must meet all certificate requirements. The CNC Turning Certificate is a related certificate. All courses are contained in the Machine Manufacturing Technology AAS Degree.

CNC TURNING CERTIFICATE CREDIT SUMMARY

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CNC TURNING CERTIFICATE COURSES

- MCH 100 Machine Tool Basics
- MCH 105 Blueprint Reading I
- MCH 110 Blueprint Reading II
- MCH 115 Geometric Dimensioning and Tolerancing
- MCH 120 Machine Shop Math
- MCH 121 Manufacturing Processes I
- MCH 125 Speeds and Feeds
- MCH 130 Machine Shop Trigonometry
- MCH 135 Basic Measuring Tools
- MCH 145 Layout Tools
- MCH 150 Precision Measuring Tools
- MCH 158 Project Machine Technology II
- MCH 180 Turning Machines and Operations
- MCH 190 Boring on the Lathe
- MCH 195 Threading on the Lathe
- MCH 259 CNC Programming-Lathe
- MCH 279 CNC Operation - Lathe
- MCH 280 Cooperative Education: Machine Technology
- MSD 115 Improving Work Relations

CNC MILLING ONE-YEAR CERTIFICATE
Minimum 49 credits. Students must meet all certificate requirements. The CNC Milling Certificate is a related certificate. All courses are contained in the Machine Manufacturing Technology AAS Degree.

CNC MILLING CERTIFICATE CREDIT SUMMARY

<table>
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CNC MILLING CERTIFICATE COURSES

- MCH 100 Machine Tool Basics
- MCH 105 Blueprint Reading I
- MCH 110 Blueprint Reading II
- MCH 115 Geometric Dimensioning and Tolerancing
- MCH 120 Machine Shop Math
- MCH 121 Manufacturing Processes I
- MCH 125 Speeds and Feeds
- MCH 130 Machine Shop Trigonometry
- MCH 135 Basic Measuring Tools
- MCH 145 Layout Tools
- MCH 150 Precision Measuring Tools
- MCH 158 Project Machine Technology II
- MCH 205 Vertical Milling Machines and Operations
- MCH 268 CNC Programming-Mill
- MCH 272 Mastercam Level I
- MCH 280 Cooperative Education: Machine Technology
- MSD 115 Improving Work Relations

MANUFACTURING TECHNICIAN: CAREER PATHWAY CERTIFICATE
Minimum 25.5 credits. Students must meet all certificate requirements. The Manufacturing Technician Certificate is a Career Pathway. All courses are contained in the Machine Manufacturing Technology AAS Degree.

PATHWAY CERTIFICATE

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MANAGEMENT/SUPERVISORY DEVELOPMENT

Southeast Campus
Student Commons Building, (SCOM) 214
971-722-6146

www.pcc.edu/programs/management-training
www.pcc.edu/career/pathways

CAREER AND PROGRAM DESCRIPTION

The Management/Supervisory Development Department offers a comprehensive program designed for students and professionals to increase their supervisory skills. Interacting with instructors who are currently managers or consultants, participants develop cutting-edge professional skills that prepare them for job acquisition, retention, and advancement in managerial and supervisory careers. Graduates are prepared to perform functions such as self-management, goal setting, time management, giving presentations, conflict resolution, leading and motivating teams, customer service, budgeting, continuous improvement, and project management.

AAS Degree graduates transfer to Marylhurst University, Oregon Institute of Technology, George Fox College, and Warner Pacific College, among others. For more information about transfer programs, contact the four-year universities as early as possible to ensure a smooth transition.

Management/Supervisory Development courses are offered in a variety of formats, which include distance learning, evening classes on campus, half-day classes of Fridays, and half-day and full-day Saturday classes. The entire degree can be completed online. Consult a program advisor regarding PCC credit for on-the-job projects (CO-OP Ed), or formal training at non-accredited institutions.
DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Management/Supervisory Development

ONE-YEAR CERTIFICATE
Management/Supervisory Development

LESS THAN ONE-YEAR CERTIFICATES
Customer Service Professional
Customer Service Manager

PREREQUISITES AND REQUIREMENTS
College placement test administered through assessment centers is recommended but not required. MTH 63 or MTH 65 must be completed with a C or better.

MANAGEMENT/SUPERVISORY DEVELOPMENT AAS DEGREE
Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

MANAGEMENT/SUPERVISORY DEGREE CREDIT SUMMARY

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MANAGEMENT/SUPERVISORY DEGREE COURSES

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<td>BA 111 Introduction to Accounting</td>
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<td>CIS 120 Computer Concepts I</td>
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<td>or BA 131 Introduction to Business Technology</td>
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<tr>
<td>MSD 101 Principles of Management and Supervision</td>
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<td>MSD 105 Workplace Communication Skills</td>
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<td>MSD 107 Organizations &amp; People</td>
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<td>MSD 111 Workplace Correspondence</td>
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<td>MSD 200 Organizations and Social Responsibility</td>
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<td>MSD 206 The Troubled Employee</td>
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<tr>
<td>MSD 222 Human Resource Management: Personnel</td>
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<td>MSD 223 Human Resource Management: Performance and Compensation</td>
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<td>MSD 279 Project Management - Intro</td>
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<td>Choose one of the following:</td>
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<thead>
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<th>Course</th>
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<tr>
<td>BA 177 Payroll Accounting</td>
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<td>BA 213 Managerial Accounting</td>
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<td>BA 226 Business Law I</td>
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<td>WR 121 English Composition</td>
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<td><strong>Total Credits</strong></td>
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* Could be used as General Education

MANAGEMENT/SUPERVISORY SUPPORT ELECTIVES

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<tr>
<td>CG 191 Exploring Identity and Diversity for College Success</td>
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Any BA, EC, HE, PE ¹ and any CTE courses not found within the course of study for the degree.

MANAGEMENT/SUPERVISORY PROGRAM/WORKSHOP ELECTIVES

<table>
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<td>MSD 116 Creative Thinking for Innovative Change</td>
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<td>MSD 119A Intercultural Communication</td>
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<td>MSD 122 Motivation Without Manipulation</td>
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<td>MSD 122A Strength Based Leadership</td>
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<td>MSD 123 Job Search Strategies</td>
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<td>MSD 123A Innovation and New Products</td>
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<td>MSD 128 Crisis Intervention: Handling the Difficult Person</td>
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<td>MSD 133 Brave New Workplace: Strategies to Excel in World of Change</td>
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<td>MSD 134 Who Moved My Cheese</td>
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<td>MSD 138A Male/Female Communication Differences</td>
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<td>MSD 138B Exploring the 7 Habits of Highly Effective People</td>
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<td>MSD 162 Coping with Angry Feelings and Angry People</td>
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<td>MSD 177 Team Building</td>
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¹ A maximum of 3 PE credits can be applied to this degree
MSD 177B  Coaching Great Performance
MSD 179B  Avoid Burnout: Build Resilience
MSD 180A  Goal Setting and Productivity
MSD 187  Humor in the Workplace
MSD 188B  Self Management for Success
MSD 192A  Project Management
MSD 193  Self Esteem the Key to Success
MSD 193A  Leadership Skill Development
MSD 194  Effective Presentation Skills
MSD 202  Training the Employee
MSD 280A  Coop. Ed.: Management and Supervisory Development
MSD 280B  Coop. Ed.: Management and Supervisory Development- Seminar
MSD 298  Trends in Management and Supervision
CAS 220  Project Management - Beginning MS Project
MSD 279A  Workplace Quality Improvement

A maximum of 9 1-credit workshops/courses may be used toward a program award, certificate or degree.

**ONE-YEAR CERTIFICATE**
Management/Supervisory Development (p. 131)

**LESS THAN ONE-YEAR CERTIFICATE: CAREER PATHWAYS**
Customer Service Professional (p. 132)
Customer Service Management (p. 132)

**MANAGEMENT/SUPERVISORY DEVELOPMENT ONE-YEAR CERTIFICATE**
Minimum 45 credits. Students must meet all certificate requirements.

**MANAGEMENT/SUPERVISORY CERTIFICATE CREDIT SUMMARY**

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**Total Credits** 45

**MANAGEMENT/SUPERVISORY CERTIFICATE COURSES**

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<td>CIS 120</td>
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**Total Credits** 45

**MANAGEMENT/SUPERVISORY PROGRAM/WORKSHOP ELECTIVES**

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<td>Coaching Great Performance</td>
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<td>Avoid Burnout: Build Resilience</td>
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<td>Goal Setting and Productivity</td>
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<tr>
<td>MSD 193A</td>
<td>Leadership Skill Development</td>
<td>1</td>
</tr>
<tr>
<td>MSD 194</td>
<td>Effective Presentation Skills</td>
<td>1</td>
</tr>
<tr>
<td>MSD 202</td>
<td>Training the Employee</td>
<td>3</td>
</tr>
<tr>
<td>MSD 280A</td>
<td>Coop. Ed.: Management and Supervisory Development</td>
<td>3</td>
</tr>
<tr>
<td>MSD 280B</td>
<td>Coop. Ed.: Management and Supervisory Development- Seminar</td>
<td>3</td>
</tr>
<tr>
<td>MSD 298</td>
<td>Trends in Management and Supervision</td>
<td>6</td>
</tr>
</tbody>
</table>
A maximum of 9 1-credit workshops/courses may be used toward a program award, certificate or degree.

### CUSTOMER SERVICE PROFESSIONAL: CAREER PATHWAY CERTIFICATE

**Minimum 16 credits. Students must meet all certificate requirements.**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 107</td>
<td>Organizations &amp; People</td>
<td>3</td>
</tr>
<tr>
<td>MSD 113</td>
<td>Influence Without Authority</td>
<td>1</td>
</tr>
<tr>
<td>MSD 117</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 151</td>
<td>Working with Difficult People</td>
<td>1</td>
</tr>
<tr>
<td>MSD 174</td>
<td>Time Management</td>
<td>1</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>or BA 131</td>
<td>Introduction to Business Technology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 16

### CUSTOMER SERVICE MANAGEMENT: CAREER PATHWAY CERTIFICATE

**Minimum 28 Credits. Includes 16 credits of Customer Service Professional Certificate courses. Students must meet all certificate requirements.**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 101</td>
<td>Principles of Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 107</td>
<td>Organizations &amp; People</td>
<td>3</td>
</tr>
<tr>
<td>MSD 113</td>
<td>Influence Without Authority</td>
<td>1</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 116</td>
<td>Creative Thinking for Innovative Change</td>
<td>1</td>
</tr>
<tr>
<td>MSD 117</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 151</td>
<td>Working with Difficult People</td>
<td>1</td>
</tr>
<tr>
<td>MSD 157</td>
<td>Conflict Management</td>
<td>1</td>
</tr>
<tr>
<td>MSD 174</td>
<td>Time Management</td>
<td>1</td>
</tr>
<tr>
<td>MSD 177</td>
<td>Team Building</td>
<td>1</td>
</tr>
<tr>
<td>MSD 121</td>
<td>Leadership Skill Development</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>or BA 131</td>
<td>Introduction to Business Technology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 28

### PROGRAM AWARDS

#### MANAGEMENT/SUPERVISORY DEVELOPMENT

**Minimum of 18 credits of management/supervisory development courses are required.**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 101</td>
<td>Principles of Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 107</td>
<td>Organizations &amp; People</td>
<td>3</td>
</tr>
<tr>
<td>MSD 113</td>
<td>Influence Without Authority</td>
<td>1</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 116</td>
<td>Creative Thinking for Innovative Change</td>
<td>1</td>
</tr>
<tr>
<td>MSD 117</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 151</td>
<td>Working with Difficult People</td>
<td>1</td>
</tr>
<tr>
<td>MSD 157</td>
<td>Conflict Management</td>
<td>1</td>
</tr>
<tr>
<td>MSD 174</td>
<td>Time Management</td>
<td>1</td>
</tr>
<tr>
<td>MSD 177</td>
<td>Team Building</td>
<td>1</td>
</tr>
<tr>
<td>MSD 121</td>
<td>Leadership Skill Development</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>or BA 131</td>
<td>Introduction to Business Technology</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 18

### CHANGE/INNOVATION MANAGEMENT

**Minimum of 18 credits to include:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 101</td>
<td>Principles of Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MSD 121</td>
<td>Leadership Skill Development</td>
<td>3</td>
</tr>
<tr>
<td>MSD 130</td>
<td>Creative Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MSD 116</td>
<td>Creative Thinking for Innovative Change</td>
<td>1</td>
</tr>
<tr>
<td>MSD 113</td>
<td>Influence Without Authority</td>
<td>1</td>
</tr>
</tbody>
</table>

Additional MSD credits: 6

Total Credits: 18

### CONFLICT MANAGEMENT

**Minimum of 18 credits to include:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 130</td>
<td>Creative Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MSD 206</td>
<td>The Troubled Employee</td>
<td>3</td>
</tr>
<tr>
<td>MSD 157</td>
<td>Conflict Management</td>
<td>1</td>
</tr>
</tbody>
</table>

Additional MSD credits: 8

Total Credits: 18

### LEADERSHIP

**Minimum of 18 credits to include:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 101</td>
<td>Principles of Management and Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 107</td>
<td>Organizations &amp; People</td>
<td>3</td>
</tr>
<tr>
<td>MSD 121</td>
<td>Leadership Skill Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional MSD credits: 6

Total Credits: 18

### PROJECT MANAGEMENT

**Minimum of 18 credits are required:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 123A</td>
<td>Innovation and New Products</td>
<td>1</td>
</tr>
<tr>
<td>MSD 174</td>
<td>Time Management</td>
<td>1</td>
</tr>
<tr>
<td>MSD 279</td>
<td>Project Management - Intro</td>
<td>4</td>
</tr>
<tr>
<td>CAS 220</td>
<td>Project Management - Beginning MS</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose 6 credits from the following:

- BA 255    | Project Management - Business Environments | 1 |
- CIS 245   | Project Management - Information Systems | 1 |
- MSD 121   | Leadership Skill Development            | 1 |
- MSD 116   | Creative Thinking for Innovative Change | 1 |
- MSD 177   | Team Building                          | 1 |
- MSD 177B  | Coaching Great Performance              | 1 |

Total Credits: 18

### HUMAN RESOURCE MANAGEMENT

**Minimum of 18 credits to include:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 222</td>
<td>Human Resource Management: Personnel</td>
<td>3</td>
</tr>
<tr>
<td>MSD 223</td>
<td>Human Resource Management: Performance and Compensation</td>
<td>3</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional MSD credits: 6

Total Credits: 18

### MATHEMATICS

**Cascade Campus**

Student Services Building (SSB), Room 313
971-722-5391 or 971-722-5454

**Rock Creek Campus**

Building 2, Room 244
971-722-7605 or 971-722-7606

**Southeast Campus**

Student Commons (SCOM), Room 214
971-722-6149 or 971-722-5391

**Sylvania Campus**
Science Technology Building (ST), Room 209  
971-722-4149 or 971-722-4172  
http://spot.pcc.edu/math/

**DESCRIPTION**

Mathematics includes the study of numbers, patterns, graphs, and abstract models using analytic reasoning and systematic problem solving skills. Mathematics and mathematical reasoning are used in situations as diverse as household budgeting and space shuttle design, subjects as different as art and law, and occupations as varied as nursing and computer programming. Mathematics can be used by everyone to enhance their understanding of the world.

PCC offers developmental and pre-college math courses (numbered below 100) that focus on algebraic skills and prepare students for certificate programs, two year degree programs, and college level coursework. Math courses at PCC numbered 100 and above are equivalent and transferable to the similarly numbered courses at Oregon's public universities. All math classes at PCC are designed to challenge students to improve their analytic reasoning, problem solving, and communication skills.

**MECHANICAL ENGINEERING TECHNOLOGY**

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

**CAREER AND PROGRAM DESCRIPTION**

Mechanical engineering technicians are problem-solvers, working as part of a team involved in the planning, design, manufacture, operation, and management of many types of systems. These may include machines and machine tools, conventional and renewable energy systems, manufacturing processes, HVAC systems, and gas and liquid distribution systems. These skilled professionals work on a variety of assignments including: design calculations, computer-aided drafting and solid modeling, quality assurance testing, applications engineering, specification writing, technical sales, scheduling, and training, among others. Employers of MET's include consulting engineering firms, manufacturers, government agencies, and equipment sales organizations.

The PCC Mechanical Engineering Technology program is designed to develop marketable skills in a broad range of 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.

**DEGREES AND CERTIFICATES OFFERED**

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Mechanical Engineering Technology  
Mechanical Engineering Technology: Green Technology and Sustainability Option

**TWO-YEAR CERTIFICATE**

Mechanical Engineering Technology

**PREREQUISITES AND REQUIREMENTS**

CET is a limited-entry program. Prospective students must meet with an engineering technology advisor prior to registering for any CMET courses.

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 test score  
2. MTH 60 or higher, or equivalent placement test score

Mechanical Engineering Technology Certificate requirements:

1. WR 115 or equivalent placement test score  
2. MTH 60 or equivalent placement test score

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

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.

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Mechanical Engineering Technology (p. 133)  
Mechanical Engineering Technology: Green Technology and Sustainability Option (p. 134)

**MECHANICAL ENGINEERING TECHNOLOGY AAS DEGREE**

Minimum 101 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. 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</td>
<td>74</td>
</tr>
<tr>
<td>CH</td>
<td>5</td>
</tr>
<tr>
<td>COMM</td>
<td>4</td>
</tr>
<tr>
<td>ENGR</td>
<td>7</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>7</td>
</tr>
<tr>
<td>Total Credits</td>
<td>101</td>
</tr>
</tbody>
</table>

133
COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>Statics</td>
</tr>
<tr>
<td>CMET 111</td>
<td>Engineering Technology Orientation</td>
</tr>
<tr>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
</tr>
<tr>
<td>ENGR 102</td>
<td>Engineering Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 121</td>
<td>Strength of Materials</td>
</tr>
<tr>
<td>CMET 122</td>
<td>Technical Engineering Physics</td>
</tr>
<tr>
<td>CMET 123§</td>
<td>Technical Algebra with Analytic Geometry</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 131</td>
<td>Applied Calculus</td>
</tr>
<tr>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
</tr>
<tr>
<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
<tr>
<td>CMET 280A</td>
<td>Cooperative Ed: Civil/Mechanical Engineering Technology</td>
</tr>
</tbody>
</table>

Note: CMET 280A is optional and available after completing term three.

<table>
<thead>
<tr>
<th>Fourth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 133</td>
<td>Materials Technology</td>
</tr>
<tr>
<td>CMET 211</td>
<td>Environmental Systems</td>
</tr>
<tr>
<td>CMET 226</td>
<td>Dynamics</td>
</tr>
<tr>
<td>CH 101§</td>
<td>Inorganic Chemistry Principles</td>
</tr>
<tr>
<td>COMM 100*</td>
<td>Introduction to Communication</td>
</tr>
<tr>
<td>or COMM 111 Public Speaking</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 212</td>
<td>Thermodynamics I</td>
</tr>
<tr>
<td>CMET 211</td>
<td>Environmental Quality</td>
</tr>
<tr>
<td>CMET 241</td>
<td>Structural Steel Drafting</td>
</tr>
<tr>
<td>CMET 254</td>
<td>Civil/Mechanical Engineering Technology Seminar</td>
</tr>
<tr>
<td>ENGR 262</td>
<td>Manufacturing Processes</td>
</tr>
<tr>
<td>General Education</td>
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<table>
<thead>
<tr>
<th>Sixth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 222</td>
<td>Thermodynamics II</td>
</tr>
<tr>
<td>CMET 223</td>
<td>Project Management</td>
</tr>
<tr>
<td>CMET 235</td>
<td>Machine Design</td>
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<tr>
<td>CMET 236</td>
<td>Structural Design</td>
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<tr>
<td>CMET 237</td>
<td>MET Applied Computer Aided Design</td>
</tr>
</tbody>
</table>

Total Credits: 101

* May be used as General Education

GREEN TECHNOLOGY AND SUSTAINABILITY AAS DEGREE
Minimum 108 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

GREEN TECHNOLOGY AND SUSTAINABILITY DEGREE CREDIT SUMMARY
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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<td>74</td>
</tr>
<tr>
<td>CH</td>
<td>5</td>
</tr>
<tr>
<td>COMM</td>
<td>4</td>
</tr>
<tr>
<td>EET</td>
<td>3</td>
</tr>
<tr>
<td>ENGR</td>
<td>7</td>
</tr>
<tr>
<td>GEO</td>
<td>4</td>
</tr>
<tr>
<td>SOC</td>
<td>4</td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>7</td>
</tr>
</tbody>
</table>

Total Credits: 108

GREEN TECH AND SUSTAINABILITY DEGREE COURSES

MECHANICAL ENGINEERING TECHNOLOGY TWO-YEAR CERTIFICATE
Minimum 66 credits. Students must also meet certificate requirements. The Mechanical Engineering Technology Certificate is a related
Certificate. All courses are contained in the Mechanical Engineering Technology AAS Degree.

MECHANICAL ENGINEERING TECHNOLOGY
CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET</td>
<td>46</td>
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<tr>
<td>CH</td>
<td>5</td>
</tr>
<tr>
<td>COMM</td>
<td>4</td>
</tr>
<tr>
<td>ENGR</td>
<td>3</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>66</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 Credits
- CMET 110 Statics 4
- CMET 111 Engineering Technology Orientation 4
- CMET 112 Technical Algebra/Trigonometry 4
- ENGR 102 Engineering Graphics 3

Second Term Credits
- CH 101 Inorganic Chemistry Principles 5
- CMET 121 Strength of Materials 4
- CMET 122 Technical Engineering Physics 4
- CMET 123 Technical Algebra with Analytic Geometry 4

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

Fourth Term Credits
- CMET 133 Materials Technology 3
- CMET 213 Fluid Mechanics 3
- CMET 221 Environmental Systems 3
- CMET 226 Dynamics 3
- COMM 100 Introduction to Communication 4
- or COMM 111 Public Speaking 4

**Total Credits:** 66

MEDICAL ASSISTING

Cascade Campus
Technology Education Building (TEB), Room 103
971-722-5667
www.pcc.edu/ma

CAREER AND PROGRAM DESCRIPTION
Those training in the Medical Assisting Program will find occupations involved in various aspects of health care in clinics and physicians' offices. The medical assistant performs a variety of clinical and administrative duties. Clinical duties may include: assisting physicians and preparing patients for examinations; taking and recording vital signs and medical histories; performing venipuncture, spirometry, and electrocardiograms; and preparing, administering, and documenting medications; collecting and processing specimens. Administrative duties may include: scheduling and receiving patients; maintaining medical records; handling telephone calls; corresponding authorizations and reports; and insurance and billing matters.

The program curriculum is based on the Patient Centered Model Home (PCMH). Students will understand the importance of a personal clinician to the health of individual patients and the population as a whole; recognize the importance of patient centeredness in successful healthcare outcomes; recognize the importance of continuous quality improvement, using evidence based results to develop best practices for patient care by way of measuring data using proper metrics; and understand the importance of information systems to the functionality of the patient centered medical home; and demonstrate appropriate leadership skills. Students are prepared to function under the supervision of a licensed provider. 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 Assistants Examination (CMA-AAMA). However, the certifying board may grant a waiver based on mitigating circumstances. See the American Association of Medical Assistants (AAMA) CMA Examination application for specifics.

Students may enter the program either in the Fall or Spring Terms. Students must receive a "C" or better in all programs required courses. The program is designed to correlate classroom and laboratory experience with practical experience in health care facilities.

DEGREES AND CERTIFICATES OFFERED

ONE-YEAR CERTIFICATE
Medical Assisting

PREREQUISITES AND REQUIREMENTS
- Completion with a "C" or better in the following: WR 121, MTH 60, BI 121, and MP 111.
- Students must demonstrate a working knowledge and/or background of basic computer skills including Windows, keyboarding, Internet, and e-mail. Students who are not able to demonstrate a working knowledge and/or background will be required to take a course(s) prior to admission.
- Complete a Medical Assisting program application including recommendation forms and transcripts from all colleges attended other than PCC.
- Once conditionally admitted, students must attend a program orientation.
- Once formally admitted, students will be required to complete various state and program requirements such as a criminal background check, immunizations and drug screening. Contact the department office for more information.
- Once formally admitted, students are strongly encouraged to meet with a Medical Assisting Program advisor.
- Students must have transportation to clinical facilities throughout the Portland Metropolitan area and surrounding communities.

MEDICAL ASSISTING ONE-YEAR CERTIFICATE
Minimum 47 credits. Students must meet certificate requirements.

MEDICAL ASSISTING CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
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<td>BI</td>
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</tr>
<tr>
<td>HE</td>
<td>1</td>
</tr>
<tr>
<td>MLT</td>
<td>3</td>
</tr>
<tr>
<td>MP</td>
<td>6</td>
</tr>
</tbody>
</table>
PROGRAMS & DISCIPLINES

RADIOTHERAPY

Radiographers are important members of the health care team and work closely with physicians, 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 (ARRT) and for licensure as a radiographer in the state of Oregon. Students are required to satisfactorily complete the course of study with a C or better in each required course and must maintain an overall grade point average of 2.0 for graduation.

PCC’s program begins each June with an introductory course. The Radiography Program is nine terms in length (27 consecutive months). The program combines campus instruction with clinical education at affiliated hospitals in the Portland area. This program is designed to prepare the student for certification as a Registered Technologist in Radiography, R.T. (R).
in a Radiography Program requires that students be computer literate, including, at least, word processing, use of spreadsheets and web searches. Students with no computer experience should discuss with an advisor ways to achieve competency prior to entering the Radiography Program. BI 231, BI 232, BI 233 and MTH 111 must be current within seven years of application. All prerequisites must be completed by end of winter term in the year in which you apply.

Potential applicants are encouraged but not required to gain health care experience by volunteering or working in the health care industry, preferably in a hospital setting to gain knowledge of professional duties and responsibilities.

The Radiography Program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission.

For specific application procedures contact the Health Admissions Office. Applications are accepted February 1 through the first Monday in April. During April and May the top applicants will be assigned to clinical affiliates for observation and interviews with clinical instructors. Selection will occur in late May. A brief orientation meeting will be held in late June. All students must be formally admitted in order to enroll in the radiography courses. Other enrollees must have program permission.

Once accepted to the program, students will be required to submit to a criminal background check and a drug screen for their clinical practicum. Students must be able to provide a valid Social Security number for the criminal background check. Proof of immunizations will also be required. For a complete listing of required immunizations, please visit our website at www.pcc.edu/rad.

During the course of the program students will be working with ionizing radiation, processing chemicals and they will provide patient care to individuals who may have contagious diseases. Special immunization is required.

CT TECHNOLOGIST TRAINING PROGRAM

Applicants must be registry eligible or currently registered, in good standing, in Radiography ARRT(R) or Nuclear Medicine ARRT(N) or (CNMT) to apply to the program.

The CT Technologist Training Program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission. Applications for admission are accepted August 1st through the 2nd Friday in September, by 5:00 p.m. Applications can be mailed to the Health Admissions Office in HT 205, phone 971-722-4908. All students must be formally admitted in order to enroll in the Computed Tomography courses. Other enrollees must have program permission.

Once accepted to the program, students will be required to submit to a criminal background check and a drug screen for their clinical practicum. Students must be able to provide a valid Social Security Number for the criminal background check. Proof of immunizations may also be required. For a complete list of required immunizations, please visit the Medical Imaging website.

MRI TECHNOLOGIST TRAINING PROGRAM

Applicants must be a Registered Radiologic Technologist ARRT(R), Registered Nuclear Medicine Technologist ARRT(N) or (CNMT), Registered Radiation Therapy Technologist ARRT(T) or Registered Medical Sonographer (RDSM) in good standing with one-year experience preferred. Technologists with less than one year experience may be admitted with Director permission.

The MRI Technologist training program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission. Applications for admission are accepted March 1st through the 2nd Friday in April, by 5:00 p.m. Applications can be mailed to the Health Admissions Office in HT 205, phone 971-722-4908.

Once accepted to the program, students will be required to submit to a criminal background check and a drug screen for their clinical practicum. Students must be able to provide a valid Social Security Number for the criminal background check. Proof of immunizations may also be required. For a complete list of required immunizations, please visit the Medical Imaging website.

RADIOGRAPHY AAS DEGREE

Minimum 119 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

RADIOGRAPHY DEGREE CREDIT SUMMARY

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<tr>
<td>First Term</td>
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</tr>
<tr>
<td>RAD 101</td>
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<td>RAD 106</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.

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<th>Course</th>
<th>Credits</th>
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<td>RAD 132</td>
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</tr>
<tr>
<td></td>
<td>RAD 140</td>
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<td>RAD 209</td>
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<td></td>
<td>Sixth Term</td>
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</table>
PROGRAMS & DISCIPLINES

LESS THAN ONE-YEAR CERTIFICATE

Computed Tomography (p. 138)
Magnetic Resonance Imaging (p. 138)

COMPUTED TOMOGRAPHY LESS THAN ONE-YEAR CERTIFICATE

Minimum 19 credits. Students must meet certificate requirements.

COURSE OF STUDY

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

CREDIT SUMMARY

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<thead>
<tr>
<th>Term</th>
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<th>Course Title</th>
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<td>MRI Physics II - Advanced Principles</td>
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<tr>
<td></td>
<td>MRI 112</td>
<td>MRI Cross-Sectional Anatomy II</td>
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</tr>
<tr>
<td></td>
<td>MRI 272</td>
<td>MRI Clinical II</td>
<td>8</td>
</tr>
<tr>
<td>Eighth</td>
<td>MRI 130</td>
<td>MRI Imaging Procedures and Diagnosis</td>
<td>2</td>
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<tr>
<td></td>
<td>MRI 140</td>
<td>MRI Registry Review</td>
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<tr>
<td></td>
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<td>MRI Clinical III</td>
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<tr>
<td>Total Credits:</td>
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<td>32</td>
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MEDICAL LABORATORY TECHNOLOGY

Cascade Campus
Allied Health Admissions
Technology Education Building (TEB), Room 103
971-722-5667
www.pcc.edu/mlt

CAREER AND PROGRAM DESCRIPTION

A medical laboratory technician performs routine clinical laboratory testing procedures to provide scientific information needed in diagnosis, prognosis and treatment of disease. Technicians use sophisticated instrumentation for these evaluations, which encompass quantitative and qualitative chemical and biological analyses of body specimens. Technicians function under the supervision of a qualified practitioner. The local metropolitan area offers very good employment opportunities and jobs are readily available in smaller communities throughout the country. Opportunities are available in hospitals, independent laboratories, research and industry for graduates of the program.

To successfully participate in the MLT Program and become employable, the student must be able to perform essential functions expected of the profession. Examples of essential functions for the MLT are communication, vision, manual dexterity, physical activity, analytical skills and technical aptitude.

Because of limited laboratory space and clinical facilities as well as the delicate balance of job opportunities in medical laboratory science, the MLT Program has a limited enrollment. The MLT Program is offered in traditional campus-based and distance learning modalities. Eligibility for entry into the first year of the program is based on completion of college courses in biology, chemistry, writing, reading and mathematics and, good oral skills communication. It is strongly recommended that applicants have completed high school chemistry, biology, algebra and English or their equivalents. Contact Allied Health admissions for information on eligibility.

Students should not interpret acceptance into the first year of the program as automatic progression to the second year of the program. Continuation into the second year is contingent upon performance during the first year. Each student entering into the second year is required to complete the student health assessment examination form provided by the MLT Department. Contact the department for any additional requirements.

Applications are accepted once a year in the winter term for fall entry. PCC’s Medical Laboratory Technology program is competitive and applications are evaluated on a point system. Minimum eligibility requirements must be met in order to apply. Contact the Allied Health Admissions office for information and admission instructions.

The Medical Laboratory Program is offered in traditional campus based and distance learning modalities. Contact the department for eligibility.

The Medical Laboratory Technology Program is accredited by:
National Accrediting Agency for Clinical Laboratory Sciences
(NAAACLS)
5600 N. River Rd., Suite 720
Rosemont, IL 60018
773-714-8880

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Medical Laboratory Technology

PREREQUISITES AND REQUIREMENTS
College placement tests are administered through assessment centers.
1. Completion of WR 115 with a C grade or better or placement into WR 121.
2. Completion of RD 115 with a C grade or better or equivalent placement test score.
3. Completion of MTH 95 with a C grade or better or placement into MTH 111.
4. Completion of 100 level Biology or higher course with a C grade or better.
5. Completion of 100 level Chemistry or higher course with a C grade or better.
6. Passing a oral communication skill assessment.
7. High school diploma or GED.

During the first term of the MLT Program students must show evidence of beginning the Hepatitis B immunization series or sign a waiver acknowledging the risk factors involved without the immunization. The second year of the MLT Program has additional health and immunization requirements. Please contact the department for more information.

Students are required to pass a criminal background check and urine drug screen. Contact the department office for more information.

Students planning to enroll in the MLT Program should contact the Allied Health Admissions Office for specific eligibility requirements and appointment for a program advising session. Because of the unique responsibilities involved in the practice of clinical laboratory science, the MLT Department reserves the right to require that a student who appears to the department unsuited for clinical laboratory science be counseled into another area of study.

Students are prepared to perform routine clinical laboratory tests under the supervision of a pathologist, medical technologist or physician. The program combines on-campus instruction in fundamental principles with clinical experiences gained through rotation in clinical laboratories. The clinical laboratories affiliated with the MLT Program include Kaiser Permanente, Legacy Health System, St. Charles Medical Center, Oregon Health and Sciences University, Peace Health, Providence Health System and Asante Health System.

Students enrolled in the MLT Program will be required to use medical devices and follow safety precautions of the clinical laboratory. Students who have a health, physical or psychological problem which may affect or be affected by the use of the devices or precautions should contact the department prior to entering the program. Graduates are eligible to sit for national examinations for certification given by several agencies.

Only those students who have been officially accepted into the first year of the MLT Program may enroll in MLT 111, MLT 112 and MLT 113.

MEDICAL LABORATORY TECHNOLOGY AAS DEGREE
Minimum 103 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

MEDICAL LABORATORY TECHNOLOGY DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>MLT</th>
<th>70</th>
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<tbody>
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<td>BI</td>
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<tr>
<td>CH</td>
<td>15</td>
</tr>
<tr>
<td>WR</td>
<td>4</td>
</tr>
<tr>
<td>Remaining General Education</td>
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</tr>
<tr>
<td>Total Credits:</td>
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</tr>
</tbody>
</table>

COURSE OF STUDY
The coursework listed below is required. Unforeseen changes to the curriculum outline may occur due to program, college and clinical affiliate updates and changes. The following is an example of a term-by-term breakdown.

First Term
CH 1041
MLT 111
WR 1212

Second Term
BI 1213
CH 1051
MLT 112
General Education

Third Term
CH 1061
BI 1223
MLT 113
General Education

Fourth Term
MLT 221
MLT 241
MLT 250
MLT 261
MLT 2714

Fifth Term
MLT 222
MLT 242
MLT 262
MLT 272

Sixth Term
MLT 223
MLT 230
MLT 263
MLT 264
MLT 273

Seventh Term
MLT 274
MLT 281

Total Credits: 103
Upper division OIT courses are offered at OIT’s Wilsonville Campus. A bachelor’s degree in two additional years. Interested students should between the two programs allows the possibility to complete a the transfer to Oregon Institute of Technology to pursue a bachelor. Graduates of the Microelectronics Technology Program may also 58 credits can apply toward a four-year baccalaureate degree. For students continuing their education beyond the Associate of Applied Science Degree in Microelectronics Technology, up to 58 credits can apply toward a four-year baccalaureate degree. Graduates of the Microelectronics Technology Program may also transfer to Oregon Institute of Technology to pursue a bachelor degree in Electronic Engineering Technology. The articulation between the two programs allows the possibility to complete a the bachelor’s degree in two additional years. Interested students should consult with a program advisor regarding additional requirements. Upper division OIT courses are offered at OIT’s Wilsonville Campus.

**MICROELECTRONICS TECHNOLOGY**

Rock Creek Campus Science and Technology Division Office Building 7, Room 202 971-722-7255 www.pcc.edu/mt

**CAREER AND PROGRAM DESCRIPTION**

Semiconductor manufacturing technicians work in clean room environments to maintain equipment, and monitor various manufacturing processes. Technicians must wear clean room suits and follow strict procedures in order to reduce particle count in the manufacturing environment. They must also follow safety procedures when handling process chemicals and gases. Technicians in this fast moving industry must have a broad range of skills and knowledge including strong backgrounds in mathematics, chemistry and physics. Good communication skills in the English language are required to function in team-oriented organizations that are standard in the industry.

Potential employers of program graduates include Intel Corporation, Oregon’s largest high-tech employer, Maxim, TriQuint Semiconductor, Biotronik, Siltronic, Microchip, FEI, SolarWorld, and other high-tech manufacturers.

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 activities and lab exercises to develop equipment analysis, maintenance, and troubleshooting skills. Students also develop oral and written communication skills in the English language while working and learning in a team environment.

Students may begin during any term of the academic year, however first year sequences must start in fall or winter term. Second year sequences must begin in fall term. First year courses must be completed before starting the second year. Day classes 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-work-week schedules to take courses. Evening classes are also available for 100 level MT courses.

Full-time day students can complete the program in six to eight terms. Students may 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.

For students continuing their education beyond the Associate of Applied Science Degree in Microelectronics Technology, up to 58 credits can apply toward a four-year baccalaureate degree. Graduates of the Microelectronics Technology Program may also transfer to Oregon Institute of Technology to pursue a bachelor degree in Electronic Engineering Technology. The articulation between the two programs allows the possibility to complete a the bachelor’s degree in two additional years. Interested students should consult with a program advisor regarding additional requirements. Upper division OIT courses are offered at OIT’s Wilsonville Campus.

**DEGREES AND CERTIFICATES OFFERED**

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Microelectronics Technology
Microelectronics Technology: Automated Manufacturing Technology Option
Microelectronics Technology: Solar Voltaic Manufacturing Technology Option

**LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE**

Solar Voltaic Manufacturing Technology

**PREREQUISITES AND REQUIREMENTS**

Students new to the program should establish math and writing level through college credit or by taking 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 math, writing, electronics and chemistry courses. Students intending to pursue any of the three MT AS degrees must be working towards MTH 95 and WR 121. New students are encouraged to meet with a department representative for advising prior to signing up for classes.

Students interested in obtaining a Solar Voltaic Manufacturing Technology Career Pathway Certificate must be able to prove their competency in MTH 65 and WR 115 through college credit or placement scores.

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Microelectronics Technology (p. 140)
Microelectronics Technology: Solar Voltaic Manufacturing Technology Option (p. 141)
Microelectronics Technology: Automated Manufacturing Technology Option (p. 142)

**MICROELECTRONICS TECHNOLOGY AAS DEGREE**

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for academic planning.

**MICROELECTRONICS TECHNOLOGY DEGREE CREDIT SUMMARY**

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<th>Credits</th>
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<td>CH</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 for a student starting in fall term. Students starting in other terms or otherwise altering this plan should work with an MT advisor regarding proper sequencing and limited offerings.
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<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
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<td>Allied Health Chemistry I</td>
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<tr>
<td></td>
<td>or CH 221</td>
<td>General Chemistry I</td>
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<tr>
<td></td>
<td>MT 101</td>
<td>Introduction to Semiconductor Manufacturing</td>
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</tr>
<tr>
<td></td>
<td>MT 102</td>
<td>Introduction to Semiconductor Devices</td>
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</tr>
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<td>MT 103</td>
<td>Introduction to Micro and Nano Processing</td>
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<td>MT 111</td>
<td>Electronic Circuits &amp; Devices I</td>
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<td>General Education (Social Science)</td>
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<td>CH 105</td>
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<td>MT 121</td>
<td>Digital Systems I</td>
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<td></td>
<td>MTH 111 (or</td>
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<td>higher)</td>
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<td>Third Term</td>
<td>MT 106</td>
<td>Statistics for Process Control</td>
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<td>Electronic Circuits &amp; Devices III</td>
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<td>Introduction to Programmable Logic Controllers</td>
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<td>WR 227</td>
<td>Technical and Professional Writing 1</td>
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<td>Fourth Term</td>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
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<td>MT 180</td>
<td>High Tech Employment Strategies</td>
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<td>MT 222</td>
<td>Quality Control Methods in Manufacturing</td>
<td>3</td>
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<tr>
<td></td>
<td>MT 223</td>
<td>Vacuum Technology</td>
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<tr>
<td></td>
<td>MT 224</td>
<td>Process Equipment I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHY 201*</td>
<td>General Physics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or PHY 211</td>
<td>General Physics (Calculus)</td>
<td></td>
</tr>
<tr>
<td>Fifth Term</td>
<td>COMM 215*</td>
<td>Small Group Communication: Process and Theory</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MT 227</td>
<td>Process Equipment II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 240</td>
<td>RF Plasma Systems</td>
<td>3</td>
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<tr>
<td></td>
<td>PHY 202*</td>
<td>General Physics</td>
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<td></td>
<td>or PHY 212</td>
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<tr>
<td>Sixth Term</td>
<td>MT 200</td>
<td>Semiconductor Processing</td>
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<tr>
<td></td>
<td>MT 228</td>
<td>Process Equipment III</td>
<td>4</td>
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<td></td>
<td>PHY 203*</td>
<td>General Physics</td>
<td>4</td>
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<tr>
<td></td>
<td>or PHY 213</td>
<td>General Physics (Calculus)</td>
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<td>Total Credits:</td>
<td>94</td>
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</table>

*SOLAR VOLTAIC MANUFACTURING TECHNOLOGY AAS DEGREE*

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for academic planning.

**SOLAR VOLTAIC MANUFACTURING TECHNOLOGY DEGREE CREDIT SUMMARY**

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tr>
<td>MTH</td>
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<td>5</td>
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<td>PHY</td>
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<td>4</td>
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<td></td>
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<td>Total Credits</td>
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<td>92</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 for a student starting in fall term. Students starting in other terms or otherwise altering this plan should work with an MT advisor regarding proper sequencing and limited offerings.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>CH 100 (or</td>
<td>Everyday Chemistry with Lab</td>
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<tr>
<td></td>
<td>higher)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>MT 111</td>
<td>Electronic Circuits &amp; Devices I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>WR 227</td>
<td>Technical and Professional Writing 1</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>MT 108</td>
<td>Statistics for Process Control</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>or MTH 243</td>
<td>Statistics I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MT 112</td>
<td>Electronic Circuits &amp; Devices II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 122</td>
<td>Digital Systems II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 131</td>
<td>Introduction to Programmable Logic Controllers</td>
<td>3</td>
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<tr>
<td></td>
<td>MTH 111 (or</td>
<td>College Algebra</td>
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<tr>
<td></td>
<td>higher)</td>
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<tr>
<td>Third Term</td>
<td>MT 113</td>
<td>Electronic Circuits &amp; Devices III</td>
<td>4</td>
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<tr>
<td>Fourth Term</td>
<td>MT 110</td>
<td>Intro to Electronics and Instrumentation</td>
<td>3</td>
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<tr>
<td></td>
<td>or MTH 243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fifth Term</td>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 180</td>
<td>High Tech Employment Strategies</td>
<td>3</td>
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<tr>
<td></td>
<td>MT 222</td>
<td>Quality Control Methods in Manufacturing</td>
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<tr>
<td></td>
<td>MT 223</td>
<td>Vacuum Technology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 224</td>
<td>Process Equipment I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHY 201</td>
<td>General Physics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or PHY 211</td>
<td>General Physics (Calculus)</td>
<td></td>
</tr>
<tr>
<td>Sixth Term</td>
<td>COMM 215</td>
<td>Small Group Communication: Process and Theory</td>
<td>4</td>
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<tr>
<td></td>
<td>MT 227</td>
<td>Process Equipment II</td>
<td>3</td>
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<td></td>
<td>MT 240</td>
<td>RF Plasma Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHY 202</td>
<td>General Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

**SOLAR VOLTAIC MANUFACTURING TECHNOLOGY AAS DEGREE**

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for academic planning.


**AUTOMATED MANUFACTURING TECHNOLOGY AAS DEGREE**

Minimum 92 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for academic planning.

**AUTOMATED MANUFACTURING TECHNOLOGY DEGREE CREDIT SUMMARY**

<table>
<thead>
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<th>Course</th>
<th>Credits</th>
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<td>MT</td>
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<tr>
<td>CIS</td>
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<td>CS</td>
<td>8</td>
</tr>
<tr>
<td>MTH</td>
<td>10</td>
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<tr>
<td>PHY</td>
<td>4</td>
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<td>WR</td>
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<tr>
<td>Automation Electives</td>
<td>4</td>
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<td>Remaining General Education</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</tbody>
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* Could be used as General Education

**COURSE OF STUDY**

The coursework listed below is required. The following is an example of a term-by-term breakdown for a student starting in fall term. Students starting in other terms or otherwise altering this plan should work with an MT advisor regarding proper sequencing and limited offerings.

**First Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MT 101</td>
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<tr>
<td>MT 102</td>
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<td>MT 104</td>
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<tr>
<td>MT 111</td>
<td>1</td>
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<tr>
<td>MTH 111 (or higher)</td>
<td>1</td>
</tr>
<tr>
<td>WR 121</td>
<td>1</td>
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</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 130</td>
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<tr>
<td>CS 161</td>
<td>1</td>
</tr>
<tr>
<td>MT 112</td>
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<td>MT 121</td>
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<td>CS 162</td>
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<td>MT 108</td>
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<tr>
<td>or MTH 243</td>
<td>1</td>
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<tr>
<td>MT 113</td>
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**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Computer Science II</td>
<td>4</td>
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<tr>
<td>Statistics for Process Control</td>
<td>2</td>
</tr>
<tr>
<td>Electronic Circuits &amp; Devices III</td>
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</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tr>
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<td>MT 180</td>
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<td>MT 222</td>
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<tr>
<td>MT 224</td>
<td>1</td>
</tr>
<tr>
<td>PHY 201</td>
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**Fifth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMM 215</td>
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<tr>
<td>MT 227</td>
<td>1</td>
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<tr>
<td>General Education (Social Science)</td>
<td>4</td>
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<tr>
<td>Automation Elective (PLC track)</td>
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**Sixth Term**

<table>
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<th>Course</th>
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<tr>
<td>CIS 278</td>
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<tr>
<td>MT 228</td>
<td>1</td>
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<tr>
<td>General Education</td>
<td>3</td>
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<tr>
<td>Automation Elective (Microcomputer track or PLC track)</td>
<td>2</td>
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</tbody>
</table>

**Total Credits**: 92

**SOLAR VOLTAIC MANUFACTURING TECHNOLOGY: CAREER PATHWAY CERTIFICATE**

Minimum 14 credits. Students must also meet certificate requirements. The Solar Voltaic Manufacturing certificate is a Career Pathway. All courses are contained in the Solar Voltaic Manufacturing Technology AAS Degree.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CH 100</td>
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<td>MT 101</td>
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<td>MT 104</td>
<td>1</td>
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<tr>
<td>MT 109</td>
<td>1</td>
</tr>
<tr>
<td>or MT 111</td>
<td>1</td>
</tr>
<tr>
<td>MT 121</td>
<td>1</td>
</tr>
<tr>
<td>MT 180</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total Credits**: 14

A higher chemistry class can be substituted

**MULTIMEDIA**

Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 218
CAREER AND PROGRAM DESCRIPTION
This program is designed to provide individuals with the entry-level skills and experience needed for employment in a wide variety of professional opportunities such as a multimedia associate producer, interface designer, digital video specialist, motion graphic artist, digital compositor, 3D artist, multimedia graphic production artist, 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.

Multimedia specialists are employed by companies that produce digital media projects destined for screen 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 begin taking classes during any term. A variety of advanced, 200 level courses are also offered. Degree and certificate students must receive a C or better in all required multimedia courses and general studies courses.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Multimedia
Video Production

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, ART 116, ART 117 and CAS 111D.

ASSOCIATES OF APPLIED SCIENCE DEGREE
Multimedia (p. 143)
Video Production (p. 143)

MULTIMEDIA AAS DEGREE
Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

MULTIMEDIA DEGREE CREDIT SUMMARY

<table>
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<th>Course</th>
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<td>ART</td>
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<td>COMM</td>
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<td>CS</td>
<td>4</td>
</tr>
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<td>MTH</td>
<td>4</td>
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<tr>
<td>WR</td>
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<tr>
<td>Multimedia Program Electives</td>
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<table>
<thead>
<tr>
<th>Remaining General Education</th>
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</thead>
<tbody>
<tr>
<td>Total Credits</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
- CS 160: Exploring Computer Science (4 credits)
- MM 110: Introduction to Multimedia (1 credit)
- MM 120: Multimedia Design (2 credits)
- MM 130: Multimedia Graphic Video and Audio Production (3 credits)
- MM 140: Multimedia Authoring I (3 credits)

Second Term
- MM 150: Multimedia Project Review, Testing and Delivery (1 credit)
- MM 160: Marketing Yourself as a Multimedia Professional (2 credits)
- MM 230: Graphics for Multimedia (4 credits)
- MM 235: Digital Video Editing and Production (3 credits)
- Multimedia Program Electives (3 credits)

Third Term
- ART 103: Understanding New Media Arts (4 credits)
- BA 131: Introduction to Business Technology (4 credits)
- MM 220: Multimedia Design II (3 credits)
- MM 232: Multimedia 3D Modeling and Animation (3 credits)

Fourth Term
- BA 205: Business Communication Using Technology (4 credits)
- COMM 130: Business & Professional Communication (4 credits)
- MM 270: Writing for Multimedia (3 credits)
- Multimedia Program Electives (3 credits)

Fifth Term
- ART 115: Basic Design - 2D Foundations (3 credits)
- ART 131A: Drawing I (3 credits)
- Multimedia Program Electives (8 credits)

Sixth Term
- ART 116: Basic Design - Color Foundations (3 credits)
- WR 122: English Composition (4 credits)
- Multimedia Program Electives (4 credits)
- General Education (4 credits)

Seventh Term
- ART 117: Basic Design - 3D Foundations (3 credits)
- MTH 105: Explorations in Mathematics (4 credits)
- General Education (4 credits)

Eighth Term
- MM 250: Advanced Multimedia Project Development I (3 credits)

Total Credits: 97

* Could be used as General Education

Multimedia Program Electives (p. 144)

VIDEO PRODUCTION AAS DEGREE
Minimum 93 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may...
be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

### VIDEO PRODUCTION DEGREE CREDIT

**SUMMARY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
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<tr>
<td>BA</td>
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<tr>
<td>MTH</td>
<td>4</td>
<td></td>
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<tr>
<td>Art Electives</td>
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<td></td>
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<tr>
<td>Film Studies Electives</td>
<td>8</td>
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<tr>
<td>Multimedia Program Electives</td>
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<tr>
<td>General Education</td>
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<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>93</td>
<td></td>
</tr>
</tbody>
</table>

**COURSES**

- **BA 205**: Business Communication Using Technology (4 credits)
- **BA 223**: Principles of Marketing (3 credits)
- **BA 250**: Small Business Management (4 credits)
- **MM 160**: Marketing Yourself as a Multimedia Professional (2 credits)
- **MM 230**: Graphics for Multimedia (4 credits)
- **MM 235**: Digital Video Editing and Production (3 credits)
- **MM 236**: Video Compression and Streaming on the Internet (3 credits)
- **MM 237**: Video Compositing and Effects (4 credits)
- **MM 239**: Digital Video Edit/Post Production II (4 credits)
- **MM 246**: Post-Production Sound for Video (2 credits)
- **MM 250**: Advanced Multimedia Project Development I (3 credits)
- **MM 258**: Video Composting and Editing II (4 credits)
- **MM 259**: Screenwriting/Preproduction (4 credits)
- **MM 260**: Video Production I (4 credits)
- **MM 261**: Video Production II (4 credits)
- **MM 262**: Video Production III (4 credits)
- **MM 280**: Cooperative Work Experience in Multimedia (3 credits)
- **MTH 105**: Explorations in Mathematics (4 credits)
- **Art Electives**: 6 credits
- **MM Electives**: 12 credits
- **Film Studies Electives**: 8 credits
- **General Education**: 8 credits
- **Total Credits**: 93 credits

  * Could be used as General Education

### ART ELECTIVES

- **ART 103**: Understanding New Media Arts (4 credits)
- **ART 116**: Basic Design - Color Foundations (3 credits)
- **ART 140A**: Digital Photography I (3 credits)

### FILM STUDIES ELECTIVES

- **ENG 195**: Film Studies: Film as Art (4 credits)
- **ENG 196**: Film Studies: Directors (4 credits)
- **ENG 197**: Film Studies: Contemporary Themes and Genres (4 credits)

### MULTIMEDIA PROGRAM ELECTIVES

- **MM 110**: Introduction to Multimedia (1 credit)
- **MM 140**: Multimedia Authoring I (3 credits)
- **MM 141**: Incorporating Multimedia Elements in Presentation Software (2 credits)
- **MM 146**: Directing Actors for Recording (4 credits)
- **MM 150**: Multimedia Project Review, Testing and Delivery (1 credit)
- **MM 160**: Marketing Yourself as a Multimedia Professional (2 credits)
- **MM 220**: Multimedia Design II (3 credits)
- **MM 231**: Vector Graphics & Animation for the World Wide Web (3 credits)
- **MM 232**: Multimedia 3D Modeling and Animation (3 credits)
- **MM 233**: 3D Character Modeling and Animation (3 credits)
- **MM 234**: 3D for Interactivity (3 credits)
- **MM 236**: Video Compression and Streaming on the Internet (3 credits)
- **MM 237**: Video Compositing and Effects (4 credits)
- **MM 238**: Creating Professional DVD-Video (4 credits)
- **MM 239**: Digital Video Edit/Post Production II (4 credits)
- **MM 240**: Multimedia Authoring II-Scripting (4 credits)
- **MM 241**: Multimedia Authoring III - Scripting (4 credits)
- **MM 244**: Creating Interactive Web Pages (3 credits)
- **MM 245**: Internet Delivery Methods (3 credits)
- **MM 246**: Post-Production Sound for Video (2 credits)
- **MM 247**: Field Sound for Video (2 credits)
- **MM 250**: Advanced Multimedia Project Development II (3 credits)
- **MM 251**: Advanced Multimedia Project Development III (3 credits)
- **MM 252**: Advanced Multimedia Project Development III (3 credits)
- **MM 253**: Intermediate Modeling and Texturing (3 credits)
- **MM 254**: Character Rigging and Animation (3 credits)
- **MM 255**: 3D Lighting and Texturing (3 credits)
- **MM 256**: Graphics for Multimedia II (4 credits)
- **MM 258**: Video Composting and Editing II (4 credits)
- **MM 259**: Screenwriting/Preproduction (4 credits)
- **MM 260**: Video Production I (4 credits)
- **MM 261**: Video Production II (4 credits)
- **MM 262**: Video Production III (4 credits)
- **MM 263**: Cinematography/Lighting (3 credits)
- **MM 264**: Broadcast I (4 credits)
- **MM 265**: Broadcast II (4 credits)
- **MM 280**: Cooperative Work Experience in Multimedia (1-3 credits)

### ONE-YEAR CERTIFICATE

- **Multimedia (p. 144)**

### LESS THAN ONE-YEAR CERTIFICATE

- **Video Production (p. 146)**

### MULTIMEDIA ONE-YEAR CERTIFICATE

Minimum 60 credits. Students must meet comprehensive certificate requirements. The Multimedia Certificate is a related certificate. All courses are contained in the Multimedia AAS Degree.

### MULTIMEDIA CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
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## PROGRAMS & DISCIPLINES

Multimedia Support Electives  
Total Credits 60

### COURSE OF STUDY

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

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### MULTIMEDIA PROGRAM ELECTIVES

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<td>Intermediate AutoCAD</td>
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### PROGRAMS & DISCIPLINES

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### VIDEO PRODUCTION CERTIFICATE

Minimum 44 credits. Students must meet comprehensive certificate requirements.

#### VIDEO PRODUCTION CERTIFICATE CREDIT SUMMARY

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#### VIDEO PRODUCTION CERTIFICATE COURSES

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</tbody>
</table>
PCC’s nursing program is competitive and applications are evaluated once per year in the winter for fall entry. Students can continue on in OHSU RN-BS nursing major program. Licensure is granted through the Oregon State Board of Nursing. After licensure, students to complete the Associate of Applied Science degree (AAS) courses (45 credits) required before starting the nursing program. The second and third year of study is comprised of six terms, allowing for promotion of health and management of chronic and acute illness; collaboration; assisting individuals and families in self-care practices; evidence-based practice; relationship-centered care; interdisciplinary need for nurses skilled in clinical judgment and critical thinking; and admission instructions.

LEGAL LIMITATIONS FOR RN LICENSURE
Applicants should be aware that the following questions are asked on the registered nurse licensure exam application by the Oregon State Board of Nursing:

1. Do you have a physical, mental or emotional condition which in any way impairs your ability to practice nursing with reasonable skill and safety?
2. Have you ever been arrested, charged with, entered a plea of guilty, nolo contendere, convicted of or been sentenced for any criminal offense, including driving under the influence, in any state?

Individuals who may have a past history of chemical abuse, felonies, or believe that past history circumstances may interfere with their ability to sit for the licensure examination should contact the OSBN at 971-673-0685 for recommendations prior to applying to the PCC Nursing Program. Applicants may also confer with the program director regarding concerns with any of these questions.

PCC NURSING PROGRAM ACCREDITATION
Oregon State Board of Nursing
17938 SW Upper Boones Ferry Rd
Portland OR 97224
971-673-0685

ACCREDITATION COMMISSION FOR EDUCATION IN NURSING, INC. (ACEN)
3343 Peachtree Rd Suite 850
Atlanta, Georgia 30326
Phone (404) 975-5000

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE
Nursing

PREREQUISITES AND REQUIREMENTS
Prior to admission to the nursing program all prerequisite courses must be completed with a grade C or higher. Pass/No Pass courses are not accepted. Note: Prerequisite courses and credits cannot apply toward the Nursing Degree Course of Study. Once admitted into the Nursing Program, the prerequisite courses applicants use to meet the admission requirements will be included in the overall evaluation of the degree plan.

PREREQUISITE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 231</td>
<td>Human Anatomy &amp; Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>BI 232</td>
<td>Human Anatomy &amp; Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>BI 233</td>
<td>Human Anatomy &amp; Physiology III</td>
<td>4</td>
</tr>
<tr>
<td>FN 225</td>
<td>Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>MTH 95</td>
<td>Intermediate Algebra ((or higher))</td>
<td>4</td>
</tr>
<tr>
<td>PSY 215</td>
<td>Human Development</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>WR 122</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Nursing Program Electives **</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Minimum required prerequisite credits completed prior to application deadline</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Minimum required prerequisite credits completed prior to enrolling in any nursing courses</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

** Additional requirements and course descriptions provided in the program's official document.**
** Must contain at least 6 credits of Social Science.

1 These courses must be completed within seven years prior to application.

2 Must be completed by the end of fall term prior to applying for the nursing program. BI 231 and MTH 95 or higher or successful completion of MTH competency exam must be a part of the 90 credits completed by application deadline for application to be complete.

3 Before enrolling in nursing courses, students must complete all 45 credits of prerequisite courses by the end of spring term of the year they will enter the program and must be accepted into the nursing program.

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 (DS) 971-722-4341. To be eligible for a reasonable accommodation, applicants must provide clear documentation of their disability. DS is responsible for determining if reasonable accommodations can be 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.

NURSING AAS DEGREE
Minimum 90 credits. Additionally, students must complete the 45 prerequisite credits prior to entry in program. 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. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

NURSING DEGREE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NRS</td>
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<td>BI</td>
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<td>General Education</td>
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<tr>
<td>Total Credits</td>
<td>90</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.

<table>
<thead>
<tr>
<th>Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>First Term</td>
<td>9</td>
<td>NRS 110</td>
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<tr>
<td></td>
<td></td>
<td>Foundations of Nursing- Health Promotion</td>
</tr>
<tr>
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<td>BI 234</td>
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<tr>
<td></td>
<td>5</td>
<td>Microbiology</td>
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<td>Second Term</td>
<td>6</td>
<td>NRS 111</td>
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<td></td>
<td></td>
<td>Foundations of Nursing in Chronic Illness I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NRS 230</td>
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<td></td>
<td>3</td>
<td>Clinical Pharmacology I</td>
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<td></td>
<td></td>
<td>NRS 232</td>
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<td></td>
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<td>Pathophysiological Processes I</td>
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<td></td>
<td></td>
<td>General Education</td>
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<tr>
<td>Third Term</td>
<td>5</td>
<td>NRS 112</td>
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<tr>
<td></td>
<td></td>
<td>Foundations of Nursing in Acute Care I</td>
</tr>
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<td></td>
<td>NRS 231</td>
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<tr>
<td></td>
<td>3</td>
<td>Clinical Pharmacology II</td>
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<td>NRS 233</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Pathophysiological Processes II</td>
</tr>
</tbody>
</table>

NURSING PROGRAM ELECTIVES

** Fourth Term**
- NRS 221 Chronic II
- General Education 5

** Fifth Term**
- NRS 222 Acute Care II
- Nursing Program Electives 5

** Sixth Term**
- NRS 224 Integrative Practicum I
- Nursing Program Electives 5

Total Credits: 90

- If could be used as General Education
- 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.
- Courses and credits used towards the Prerequisites cannot apply towards the Nursing Degree Course of Study.

NURSING PROGRAM ELECTIVES
Any course from the General Education/ Discipline Studies List (p. 24).

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 soon after the prerequisite math course.

OCCUPATIONAL SKILLS TRAINING

Southeast Campus
Mt Tabor Hall (MTH), Room 128
971-722-6127
971-722-6124 (fax)
www.pcc.edu/ost

CAREER AND PROGRAM DESCRIPTION
The Occupational Skills Training program is designed to provide the opportunity for students to receive instruction in a specific occupational area. The programs are individualized and allow flexibility in program design, delivery, and implementation. 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

PREREQUISITES AND REQUIREMENTS
An interview with an OST coordinator is required for assessment, to determine the specific occupation and to identify a suitable training site and its availability. Prerequisites are determined by specific occupational standards.

COURSE OF STUDY
PCC faculty and academic professionals approve community employers based on their experience and training in the specific occupational area. PCC faculty and academic professionals provide on-site monitoring of student progress toward learning outcomes through monthly on-site supervisor reports, weekly/monthly student reports, quarterly learning outcomes and curriculum reviews, and
quarterly student evaluations. This is an open entry/open exit program so that students complete a full college quarter, but may begin their program at any time during the school term.

**OCCUPATIONAL SKILLS TRAINING TWO-YEAR CERTIFICATE**

Minimum 64 credits are required for a Certificate of Completion. A maximum of 64 pass/no pass credits are allowed in the Occupational Skills Training Certificate. Students who have OST 101 and no other PCC credit courses will not have a GPA as all OST courses are offered as Pass/No Pass only. A maximum of 24 credits of Occupational Skills credit may be applied to an Associate of General Studies Degree.

OPHTHALMIC MEDICAL TECHNOLOGY

Cascade Campus
Technology Education Building (TEB), Room 103
971-722-5667
www.pcc.edu/omt

**CAREER AND PROGRAM DESCRIPTION**

Those training in the Ophthalmic Medical Technology Program develop skills to perform ophthalmic procedures under the supervision of a licensed physician. These procedures include: medical histories, diagnostic tests, refractometry, anatomical and functional ocular measurements and tests, administration of topical ophthalmic and oral medications, instructing patients, maintaining equipment, sterilizing surgical instruments, assisting in minor ophthalmic surgery and assisting in the fitting of contact lenses. Ophthalmic medical technology is a rapidly expanding field and a growing demand exists for technicians.

The Ophthalmic Program is a limited entry program with restricted enrollment. The program is limited to 24 students. Only those students who have been officially admitted to the Ophthalmic Medical Technology Program may enroll in OMT courses. Professionals in the field may be admitted when space is available.

The program begins fall term only. To advance to the next term students must successfully complete all of the previous term’s coursework by receiving a grade of Pass or C or better.

This program is designed to correlate classroom and laboratory experiences with clinical experience in ophthalmic offices and clinics and prepares students to function under the supervision of a licensed physician.

This program is accredited by the Commission on Accreditation for Ophthalmic Medical Programs (CoA-OMP). Students in the OMT Program will test for national certification as an ophthalmic technician.

**OPHTHALMIC MEDICAL TECHNOLOGY DEGREE**

Minimum 98 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**DEGREES AND CERTIFICATES OFFERED**

**ASSOCIATE OF APPLIED SCIENCE DEGREE**

Ophthalmic Medical Technology

**PREREQUISITES AND REQUIREMENTS**

1. Successful Completion of WR 121, MTH 65, BI 121, BI 122 and MP 111.
2. Complete application including two recommendation forms and unofficial transcripts from any colleges attended other than PCC.
3. Students must have working knowledge or background of basic computer skills including Windows, Internet and e-mail.
4. Program advising session with an Cascade Allied Health Admissions Coordinator
5. Students must have transportation to practicum facilities throughout the Portland metropolitan area.
6. After admission to the program, but before beginning practicum, students may be required to complete some or all of the following: criminal background check, proof of immunizations, and a ten-panel drug screening. There will be a cost to the student associated with completing this requirement.
7. Students may consult with faculty advisor about alternative approaches to completing portions of the Ophthalmic Medical Technology curricula.

**OPHTHALMIC MEDICAL TECHNOLOGY AAS DEGREE**

Minimum 98 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

**COURSE OF STUDY**

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMT 102</td>
<td>Ophthalmic Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OMT 145</td>
<td>Clinical Optics 1</td>
<td>2</td>
</tr>
<tr>
<td>OMT 163</td>
<td>Ocular Anatomy and Physiology</td>
<td>2</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
<td>4</td>
</tr>
<tr>
<td>HE 113</td>
<td>First Aid &amp; CPR/AED Professional Rescuers/Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>MP 135</td>
<td>Pharmacology for Allied Health</td>
<td>3</td>
</tr>
<tr>
<td>OMT 104</td>
<td>Ophthalmic Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OMT 146</td>
<td>Clinical Optics 2</td>
<td>2</td>
</tr>
<tr>
<td>MA 131</td>
<td>Introduction to Medical Science</td>
<td>5</td>
</tr>
<tr>
<td>OMT 103</td>
<td>Ocular Pharmacology</td>
<td>2</td>
</tr>
<tr>
<td>OMT 106</td>
<td>Introduction to Clinical Skills</td>
<td>3</td>
</tr>
<tr>
<td>OMT 121</td>
<td>Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>OMT 147</td>
<td>Clinical Optics 3</td>
<td>2</td>
</tr>
<tr>
<td>OMT 231</td>
<td>Seminar I</td>
<td>2</td>
</tr>
</tbody>
</table>

Please Note: 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 in the fourth and later terms.
PROGRAMS & DISCIPLINES

Fourth Term
OMT 122 Practicum II 5
General Education 4

Fifth Term
OMT 206 Diagnostic Procedures I 4
OMT 209 Surgical Assisting Procedures 4
OMT 222 Practicum Second Year 4
OMT 232 Seminar II 2

Sixth Term
OMT 207 Diagnostic Procedures II 4
OMT 208 Ocular Motility 2
OMT 222 Practicum Second Year 4
OMT 232 Seminar II 2
OMT 250 Ophthalmic Imaging 3

Seventh Term
MP 140 Introduction to Health Law and Ethics 3
OMT 210 Advanced Diagnostics 4
OMT 222 Practicum Second Year 4
OMT 232 Seminar II 2

Total Credits: 98

* Could be used as General Education

PARAEDUCATOR

See Education (p. 89)

PARALEGAL

Cascade Campus
Terrell Hall (TH), Room 109
971-722-5212 or 971-722-5770

www.pcc.edu/paralegal

CAREER AND PROGRAM DESCRIPTION

A paralegal is a trained paraprofessional who assists the attorney in delivery of legal services to the client. Paralegals work under the supervision of an attorney at law firms, corporations, state and federal agencies, non-profits and other sectors. Tasks include: client and witness interviews, document preparation, organization of case materials and data, investigation, research and file management. A paralegal performs these tasks under the supervision of an attorney. The program also provides students with skills which enable them to pursue jobs in alternative careers.

The PCC Paralegal Program is designed to provide students with a high quality background in paralegal studies, including providing development of analytic skills; familiarity with substantive and procedural law; development of various practical skills; familiarity with legal terminology; and research and writing skills. The program has classes that focus on specific skills, such as client counseling, investigation and research, as well as various substantive law classes. Legal research classes are taught in the program’s legal research center located at Terrell Hall (TH) room 109 on the Cascade Campus.

The Paralegal program at Portland Community College is approved by the American Bar Association (ABA) effective February 8, 2010. It is the first Paralegal program in the State of Oregon to achieve ABA approved status. ABA approval provides students and the legal community assurance that PCC’s program is providing a high quality educational experience grounded in practical paralegal preparation, training and education to its students.

Classes meet primarily on weekday evenings from 6:30 pm to 9:20 pm. Some daytime and Saturday classes are scheduled. Most classes are located at the Cascade Campus or CLIMB Center.

Students who complete the AAS in Paralegal degree may be able to transfer into the Bachelor of Applied Science in Management program at Oregon Institute of Technology. Paralegal courses may transfer to Portland State University. Students interested in transferring to any four-year university should check with that institution regarding transferability status of specific paralegal courses.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Paralegal

ONE-YEAR CERTIFICATE

Paralegal

PREREQUISITES AND REQUIREMENTS

1. High school completion or GED.
2. Completion of reading, writing and math placement tests unless waived based upon equivalent course work or college degree.

College level course work from an accredited college may be substituted for required degree and/or certificate course work. Program advising is required. Students planning to enroll in the program should contact the department for specific eligibility requirements and advising. The Paralegal AAS degree is an open enrollment program. The Paralegal Certificate is a limited entry program requiring department chair approval. Completing certificate admission requirements does not guarantee admission into the program.

A grade of C or better for all PL core courses is required. An overall GPA of at least 2.0 for all PL courses is required to graduate.

Visit the department web page for details on admission, prerequisites and requirements: www.pcc.edu/programs/paralegal/

PARALEGAL AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

PARALEGAL DEGREE CREDIT SUMMARY

PL Core Classes 24
Paralegal Program Electives 21
Paralegal Support Electives 18
Restricted General Education 27

Total Credits 90

PARALEGAL DEGREE COURSES

PL 101 Introduction to Law - Fundamentals 3
PL 102 Introduction to Law - Substantive Areas 3
PL 103 Introduction to Law - Ethics 3
PL 107 Techniques of Interview 3
PL 130 Legal Software 3
PL 201 Legal Research and Library Use 3
PL 202 Computer Research in Law 3
PL 204 Applied Legal Research and Drafting 3
Paralegal Program Electives 1 21
Paralegal Support Electives 2 18
Restricted General Education 3 27

* Could be used as General Education
PARALEGAL PROGRAM ELECTIVES

PL 104  Investigation Techniques for Paralegals  3
PL 105  Litigation  3
PL 109  Estate Planning  3
PL 111  Probate Practice  3
PL 113  Income Tax Law  3
PL 116  Real Property Law I  3
PL 124  Law Office Management  3
PL 140  Immigration Law for Paralegals  3
PL 205  Advanced Litigation  3
PL 206  Intellectual Property Law  3
PL 208  Family Law  3
PL 210  Elder Law  3
PL 216  Employment Law  3
PL 219  Contract and Consumer Law  3
PL 220  Worker’s Compensation  3
PL 221  Bankruptcy Law  3
PL 222  Corporate Law Practice  3
PL 224  Torts and Personal Injury  3
PL 226  Criminal Law for Paralegal  3
PL 230  E-Discovery  3
PL 280A  Cooperative Education: Paralegal  3

1 Courses from other departments, such as BA or CJA may be used as Paralegal electives for up to six credits. Students should consult the department for course approval.

2 Any 100 to 299 level course


PARALEGAL ONE-YEAR CERTIFICATE

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

PARALEGAL CERTIFICATE CREDIT SUMMARY

PL Core Classes  24
Paralegal Program Electives  1  21
Total Credits  45

PARALEGAL CERTIFICATE COURSES

PL 101  Introduction to Law - Fundamentals  3
PL 102  Introduction to Law - Substantive Areas  3
PL 103  Introduction to Law - Ethics  3
PL 107  Techniques of Interview  3
PL 130  Legal Software  3
PL 201  Legal Research and Library Use  3
PL 202  Computer Research in Law  3
PL 204  Applied Legal Research and Drafting  3
Paralegal Program Electives  21
Total Credits  45
PHILOSOPHY
Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251
Rock Creek Campus
Building 3, Room 201
971-722-7235
Sylvania Campus
Social Science Building (SS), Room 217
971-722-4289

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.

PHYSICAL EDUCATION
Cascade Campus
Jackson Hall (JH), Room 210
971-722-5500
Rock Creek Campus
Building 3, Room 201
971-722-7327
Southeast Campus
Mt. Scott Hall (MSH), Room 103
971-722-6146
Sylvania Campus
Health Technology Building (HT), Room 215
971-722-4210

DESCRIPTION
Physical education offers students the opportunity to improve physical fitness and conditioning through a variety of physical education classes. Students of all ages and fitness levels can take these classes to improve overall fitness, health, and wellness and ultimately increase their quality of life. Students will come away from physical education classes with knowledge about the value and benefits of physical fitness and the skills to design a personal fitness program to achieve lifelong wellness.

PCC does not provide medical coverage. It is strongly recommended that students have medical coverage and a recent physical exam before they participate in physical education courses. Students who require classroom accommodations should notify the physical education instructor and the Disability Services (DS). DS works with students to identify and ensure reasonable accommodations in PCC classes and programs.

The Oregon State System of Higher Education and the systems in other states vary in their physical education requirements. Many physical education classes fulfill degree requirements at PCC or other institutions and colleges, or may transfer as elective credit. Students should check with their PCC program advisor or with the institution to which they plan to transfer. For information on the Fitness Technology Certificates and AAS degree, see Fitness Technology (p. 107) in the catalog.

PHYSICS
Cascade Campus
Jackson Hall (JH), Room 210
971-722-5209
Rock Creek Campus
Building 7, Room 202
971-722-7500
Southeast Campus
Student Commons (SCOM), Room 214
971-722-6146
Sylvania Campus
Science Technology Building (ST), Room 312
971-722-4174

DESCRIPTION
Physics is the root discipline of science that describes the natural universe at its most fundamental level. Physics is relevant to a broad range of academic pursuits including chemistry, biology, engineering, medicine and liberal arts. Physics allows students to view the world with a new understanding and appreciation of its order and beauty. Physics is offered at three different levels: conceptual physics (PHY 101, PHY 102, PHY 103), algebra based (PHY 201, PHY 202, PHY 203) and calculus based (PHY 211, PHY 212, PHY 213). An introductory astronomy series is also offered (PHY 121, PHY 122, PHY 123).

POLITICAL SCIENCE
Cascade Campus
Liberal Arts and Mathematics Division
Terrell Hall (TH), Room 220
971-722-5251
Rock Creek Campus
Building 3, Room 201
971-722-7327
Sylvania Campus
Social Science Building (SS), Room 215
971-722-4289

DESCRIPTION
Political science focuses upon politics and political systems and the behavior of people within political systems. At PCC, primary emphasis is on American government, the constitutional background of American politics, political parties, interest groups, elections, Congress, the Presidency, the Supreme Court and domestic and foreign policies. In addition, PCC offers courses in peace studies, comparative politics, international relations, American foreign policy, political ideologies, and global concerns including ecological issues.

PROFESSIONAL MUSIC
Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 210
971-722-5226 or 971-722-5430

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 this certificate by completing a minimum of 43 credits, including 37 credits of required, professional music courses and six credits of elective professional music courses. A graduate may pursue a career as a private teacher of music, instrumental musician, composer, arranger, orchestrator, music engineer, or producer. To learn whether courses will transfer to a four-year university, students must check with the institutions to which they intend to transfer.

DEGREES AND CERTIFICATES OFFERED

LESS THAN ONE-YEAR CERTIFICATE

Professional Music

PREREQUISITES AND REQUIREMENTS

The following professional music courses will be required of all program students. All sequential courses must be taken and passed in sequence.

PROFESSIONAL MUSIC LESS THAN ONE-YEAR CERTIFICATE

Minimum 43 credits. Students must meet certificate requirements.

PROFESSIONAL MUSIC CERTIFICATE CREDIT SUMMARY

<table>
<thead>
<tr>
<th>Course Type</th>
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<td>Total Credits</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.

<table>
<thead>
<tr>
<th>Summer Term</th>
<th>Credits</th>
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<tr>
<td>Professional Music Certificate Electives</td>
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</table>

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>First Term</td>
<td>MUC 101</td>
<td>Commercial Music Theory I</td>
<td>3</td>
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<tr>
<td></td>
<td>MUC 120A</td>
<td>Sight Singing and Ear Training I</td>
<td>1</td>
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<tr>
<td></td>
<td>MUC 130A</td>
<td>Rhythm Training I</td>
<td>1</td>
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<tr>
<td></td>
<td>MUC 140A</td>
<td>Group Piano I</td>
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<td></td>
<td>MUC 145A</td>
<td>Group Guitar/Bass I</td>
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<td>MUC 150A</td>
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<td></td>
<td>MUC 165</td>
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<td>MUS 205</td>
<td>Introduction to Jazz History</td>
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<td>MUC 102</td>
<td>Commercial Music Theory II</td>
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<td>Income Tax Preparation for Musicians</td>
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<td>MUC 280A</td>
<td>Cooperative Education: Vocational Music</td>
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<td>MUS 206</td>
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<td>Commercial Music Theory III</td>
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<td>MUC 120C</td>
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<td>MUC 143</td>
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<td>MUC 164</td>
<td>Survey of the Music Industry</td>
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<td>Introduction to the History of Folk Music</td>
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Total Credits: 43

PROFESSIONAL MUSIC CERTIFICATE ELECTIVES

Students may select from among the following courses to make up the number of credits required for the certificate. It is possible to concentrate on music writing or performance.

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<th>Credits</th>
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<td>Electronic Media I</td>
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<tr>
<td>MUC 124</td>
<td>Electronic Media II</td>
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<td>MUC 125</td>
<td>Electronic Media III</td>
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<td>Computer Notation and Scoring 1</td>
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<td>Computer Notation and Scoring 2</td>
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<td>MUC 140B</td>
<td>Group Piano II</td>
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<td>MUC 144</td>
<td>Contemporary Singing</td>
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<td>The Music Business: Career Opportunities and Self Defense</td>
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<td>MUC 225</td>
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<td>MUC 108</td>
<td>Music Cultures of the World</td>
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PSYCHOLOGY

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<tr>
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<th>Location</th>
<th>Phone</th>
<th>Website</th>
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<tr>
<td>Cascade</td>
<td>Terrell Hall (TH), Room 220</td>
<td>971-722-5251</td>
<td><a href="http://www.pcc.edu/cascade">http://www.pcc.edu/cascade</a></td>
</tr>
<tr>
<td>Rock Creek</td>
<td>Building 3, Room 201</td>
<td>971-722-7327</td>
<td><a href="http://www.pcc.edu/rockcreek">http://www.pcc.edu/rockcreek</a></td>
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<tr>
<td>Mt. Scott</td>
<td>MSH, Room 103</td>
<td>971-722-6146</td>
<td><a href="http://www.pcc.edu/mtscott">http://www.pcc.edu/mtscott</a></td>
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<tr>
<td>Sylvania</td>
<td>Social Science Building (SS), Room 217</td>
<td>971-722-4269</td>
<td><a href="http://www.pcc.edu/sylvania">http://www.pcc.edu/sylvania</a></td>
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DESCRIPTION

Psychology is the scientific study of behavior and mental processes. Psychologists use diverse technological, psycho-physiological, statistical and analytical techniques to investigate how the individual’s immediate environment, past experience, physiological makeup, and sociocultural context influence current thoughts, emotions and behavior. Psychologists actively translate basic science into usable
technology, educational innovations, and practical interventions at the personal, group, community, and societal levels.

People with a bachelor's degree in psychology may pursue careers in a variety of fields, in both the public and private sectors. Careers within the field of psychology often require graduate degrees - and depending on the career - specialized certification/licensure. Psychology students at PCC typically pursue a transfer or bachelor's degree or another related certificate. Psychology degrees at the associate's level are not available.

REAL ESTATE

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4393 or 971-722-4267

www.pcc.edu/re

CAREER AND PROGRAM DESCRIPTION

PCC's Real Estate Program offers courses to prepare individuals to become licensed in Oregon as a Real Estate Broker or Property Manager. Real estate brokers represent buyers and/or sellers in real estate sale/lease transactions. Property managers oversee the management of properties such as single-family residences, multi-family apartments, condominiums, office or retail buildings, and other types of income producing real estate.

PCC is approved by the state of Oregon Real Estate Agency to provide pre-license educational training for real estate brokers and property managers. In addition, PCC also offers general education courses which give students an introduction to the field of real estate and information on how to invest in real estate.

Students may also qualify to receive an "Occupational Certificate" in either the Real Estate Broker Program or the Property Manager Program.

DEGREES AND CERTIFICATES OFFERED

LESS THAN ONE-YEAR CERTIFICATE

Property Manager
Real Estate Broker

LESS THAN ONE-YEAR CERTIFICATE

Property Manager (p. 154)
Real Estate Broker (p. 154)

PROPERTY MANAGER LESS THAN ONE-YEAR CERTIFICATE

Minimum 12 credits. Students must meet certificate requirements.

PROPERTY MANAGER CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>RE 100</td>
<td>Introduction to Real Estate</td>
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<tr>
<td>RE 250</td>
<td>Real Estate Investments I</td>
<td>3</td>
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<tr>
<td>RE 252</td>
<td>Real Estate Property Management</td>
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</table>

Total Credits 12

REAL ESTATE BROKER LESS THAN ONE-YEAR CERTIFICATE

Minimum 16 credits. Students must meet certificate requirements.

REAL ESTATE BROKER CERTIFICATE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>RE 110</td>
<td>Real Estate Practices</td>
<td>3</td>
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<td>RE 112</td>
<td>Real Estate Law</td>
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<td>RE 114</td>
<td>Real Estate Agency Law</td>
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<td>RE 116</td>
<td>Real Estate Finance</td>
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<tr>
<td>RE 118</td>
<td>Real Estate Brokerage</td>
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<tr>
<td>RE 126</td>
<td>Real Estate Contracts</td>
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Total Credits 16

Note: Requirements for licensing/certification as a broker or property manager may change over time. Students are advised to confirm the current license/certification requirements with the Oregon Real Estate Agency or PCC before making any course commitments.

REFRIGERATION, HVAC AND TRADE RELATED

See Facilities Maintenance Technology (p. 104)

RELIGIOUS STUDIES

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

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

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 two Religious Studies courses, R 201 and R 210. These courses fulfill both General Education and cultural literacy requirements. R 210 transfers to PSU as one of the required courses for the Religious Studies minor. AAOT students interested in earning a bachelor’s degree in Religious Studies should take related courses in areas such as anthropology, history, literature, and philosophy. Students must check for the specific requirements of the bachelor’s program to which they intend to transfer. The interdisciplinary nature of the field allows students to customize their educational goals while providing a solid foundation for future learning.

RUSSIAN

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4841

www.pcc.edu/programs/russian

DESCRIPTION

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

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

All students who enroll in world language classes (including those on the waiting list) are expected to attend class the first day when
material essential for successful completion of the course will be presented. Students who do not attend the first class session may be replaced by those who do attend.

SIGN LANGUAGE INTERPRETATION (SLIP)
Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4672 (Voice)
503-928-5867 (Videophone)
www.pcc.edu/sign

CAREER AND PROGRAM DESCRIPTION
Professional sign language interpreters work in a variety of settings such as education, social service, religion, government, business, performing arts, mental health, medical, legal, video relay and law enforcement. Interpreters may specialize in one area or may work in private practice in a variety of settings. Many of the graduates from this program are hired into entry level positions in educational settings. Currently, the demand for services exceeds the supply of qualified interpreters nationwide.

The program focuses on the acquisition of bi-cultural and bi-lingual abilities and on both interpretation and transliteration skills. Students may retake courses if needed (not for credit), 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) or Deaf Studies and general education toward a bachelor degree in Human Studies or another discipline at Marylhurst. For more information, contact Marylhurst University.

A transfer agreement between PCC and Portland State University allows students to apply credits earned in Sign Language Interpretation (SLIP) AAS degree or Deaf Studies Certificate toward a bachelor degree in any major at Portland State University. For more information, contact Portland State University.

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
• Submit an application.
• Complete WR 121 with a C or better prior to entering the program.
• Complete ASL 240 with a C or better prior to entering the program. Students taking any prerequisites classes during the summer prior to enrollment may be tentatively accepted based on their progress in the course at midterm, with final acceptance pending successful completion of the course.
• Complete ASL 101, ASL 102, ASL 103, and ASL 201, ASL 202, ASL 203 or ASL 150, ASL 151, ASL 250, ASL 251 with a C or better prior to entering the program.
• Demonstrate American Sign Language and other basic skill and knowledge competencies through the department-administered assessment given in the spring.

The deadline to complete steps 1-4 above is the last Friday in March. Once step 4 is complete, students will be given a language assessment. Minimum entrance requirements are intermediate level for ASL and superior level for English. Candidates with higher language competencies will be awarded seats before those with lower language competencies.

ASL 240 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 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 certificate program or with the Associate of Applied Science Degree.

Note: All courses within the SLIP are open to individual professional interpreters and to other professionals working in fields serving Deaf people. This is subject to course availability, class size and program permission based on prerequisite skill and knowledge. Please contact the department chair to discuss the suitability and appropriate placement for the particular professional.

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: COMM 111 and TA 144.

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 certificate closely parallels that of the SLIP, with the omission of some of the hands on interpreting process. Coursework for the Deaf Studies certificate closely parallels that of the SLIP, with the omission of some of the hands on interpreting courses. The Deaf Studies certificate does not qualify students to work as interpreters, but may be helpful to those who work with deaf people in a field other than interpreting such as educational paraprofessional, or working in an agency that serves Deaf people. Deaf Studies is a certificate program and does not lead to an associate degree.

SIGN LANGUAGE INTERPRETATION AAS DEGREE
Minimum 107 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the courses in the program of study indicated with a § symbol. Students should consult with program advisors for course planning.

SIGN LANGUAGE INTERPRETATION DEGREE CREDIT SUMMARY
ITP 91
General Education 16
Total Credits 107
COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

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<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>ITP 111</td>
<td>American Sign Language I</td>
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<tr>
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<td>ITP 120§</td>
<td>Fingerspelling I</td>
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<td>ITP 241</td>
<td>Deaf Culture</td>
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<td>ITP 270</td>
<td>Interpreting Process I</td>
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<td>Fifth Term</td>
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§ Course cannot be substituted with another course.
¹ Only one internship is required.

TWO-YEAR CERTIFICATE
Sign Language Interpretation (p. 156)

ONE-YEAR CERTIFICATE
Deaf Studies (p. 156)

SIGN LANGUAGE INTERPRETATION TWO-YEAR CERTIFICATE
Minimum 91 credits. Students must meet certificate requirements. The Sign Language Interpretation Certificate is a related certificate.

SIGN LANGUAGE INTERPRETATION CERTIFICATE CREDIT SUMMARY

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DEAF STUDIES ONE-YEAR CERTIFICATE
Minimum 55 credits. Students must meet certificate requirements.

DEAF STUDIES CERTIFICATE CREDIT SUMMARY

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Programs & Disciplines

Courses of Study

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>First Term</td>
<td>ITP 111</td>
<td>American Sign Language I</td>
<td>5</td>
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<tr>
<td></td>
<td>ITP 120</td>
<td>Fingerspelling I</td>
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<tr>
<td></td>
<td>ITP 241</td>
<td>Deaf Culture</td>
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<tr>
<td>Second Term</td>
<td>ITP 112</td>
<td>American Sign Language II</td>
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<td>ITP 180</td>
<td>Field Experience</td>
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<td></td>
<td>ITP 230</td>
<td>American Sign Language Linguistics I</td>
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<td>ITP 260</td>
<td>Interpreting Theory I</td>
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<td>Third Term</td>
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<td>American Sign Language III</td>
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<td>ITP 231</td>
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<td>American Sign Language IV</td>
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<tr>
<td></td>
<td>HEC 226</td>
<td>Child Development</td>
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<tr>
<td></td>
<td>or PSY 215</td>
<td>Human Development</td>
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<tr>
<td>Fifth Term</td>
<td>ITP 121</td>
<td>Fingerspelling II</td>
<td>2</td>
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<tr>
<td></td>
<td>ITP 212</td>
<td>American Sign Language V</td>
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<td></td>
<td>ITP 261</td>
<td>Interpreting Theory II: K-12 Education</td>
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<td>ITP 285</td>
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</table>

1. HEC 226 or PSY 215 can be taken during any term.

Sign Language Studies (SLS)

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4672 (Voice)
503-928-5867 (Videophone)

Description

American Sign Language (ASL) is the signed language used by Deaf people in the United States and parts of Canada. ASL courses are offered for General Education credits as a modern language for students earning an associate degree from PCC, and 200-level core courses satisfy the language requirement for the Associate of Arts Oregon Transfer (AAOT).

With the exception of ASL 240, American Sign Language is used in classes; no spoken English is used. This method involves students 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 Interpretation Admissions Page.

In addition to the certificate and degree offered in Sign Language Interpretation, PCC also offers a certificate in Deaf Studies. The prerequisites for both of these programs are 24 credits of ASL courses and ASL 240 (History of the Deaf Community in America). Those students who have learned some ASL before coming to PCC can request an ASL skills assessment interview to be placed in the appropriate level ASL course.

All students who enroll in American Sign Language classes, including those on the waiting list, are expected to attend the first class session, 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 previously studied sign language elsewhere or who are returning to study ASL after more than a six month absence must make an appointment for a placement interview by calling the above phone number.

There are no prerequisites for entry into the first term of American Sign Language. However, students should read the course descriptions for the prerequisites for other American Sign Language courses to determine their eligibility. ASL core courses are offered in both regular and accelerated formats. The regular courses are four credits per term, while the accelerated courses are six credits per term. Students can switch from regular to accelerated courses (or the reverse) between the 100 level and the 200 level, but not within one level.

Sociology

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

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

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

Sylvania Campus
Social Science Building (SS), Room 217
971-722-4289

Description

Sociology is the scientific study of human interaction, with a focus on social groups and systems. Using sociological concepts, theories, and research, sociologists try to understand patterns of social behavior within varying cultures, structures, and institutions. We examine group dynamics, social norms, deviance, systems of inequality, and the causes, consequences, and solutions of different social problems.

The goal of PCC’s sociology courses is to increase students’ awareness of how social forces affect their lives. Sociology also provides students the opportunity to critically evaluate sociological processes that occur in the world around them. These skills are essential in a rapidly changing world. Whatever career a student chooses, from engineering to social services, sociology provides a foundation for understanding how the world works and the role we can play within it.

SOC 204 and SOC 205 This course explores how social forces shape people’s lives and provides tools to evaluate and participate in social change. It introduces students to major sociological concepts, theories, and research from a macro-level and global perspective, focusing on how and why cultures, social structures, institutions, and group behaviors change over time. Using the sociological perspective, students identify the causes and consequences of social change across institutions, including the economy, politics, family, education, religion, healthcare, and media. In addition to examining trends in urbanization, population, environment, and social movements.

Many Sociology courses also offer service-learning and cooperative education options. These teaching and learning tools allow students to apply course material to community service activities and internships, with reflection assignments connected back to course learning objectives.

Spanish

Cascade Campus
Obtain professional employment, are active in many areas of semi-professional and professional theatre, or excel with the hands-on skills obtained here when transferring to four-year academic programs. Many of our exceptional TA students in our program have competed in the Kennedy Center/American College Theatre Festival and have brought home regional and national awards and recognition.

In the coming years the Sylvania TA program will produce William Shakespeare’s Much Ado About Nothing, Hairspray, The Broadway Musical, and numerous other exciting theatre productions, often in collaboration with the Dance and Music programs. Students are required to take credit courses when involved in TA productions.

Theatre Arts courses provide a nurturing atmosphere for exploration of this most collaborative and compelling art form. In addition, the popular annual student Short Play Festival showcases short plays often written, directed, acted, crewed and designed by PCC students. The Theatre Arts Club also produces 24-hour plays each term, occasional original works/staged readings, while the popular Improvisation Club (PANTS) performs regularly and has won local acclaim and competitions.

The Cascade campus offers courses in the fundamentals of acting, acting for the camera and theatre appreciation are also taught. These campuses continue to grow and plan on specializing in specific areas of theatre training.

VETERINARY TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
971-722-7461
www.pcc.edu/vet

CAREER AND PROGRAM DESCRIPTION

Veterinary technicians work with veterinarians and are skilled and knowledgeable in the practical application of aspects involved in the care and handling of animals, clinical laboratory procedures, animal diseases, animal nutrition, pharmacology, radiography, anesthesiology and medical and surgical assistance. Graduates are prepared to function as competent veterinary technicians in small and large animal hospitals and clinics, laboratory animal research facilities, educational institutions, animal shelters, military service and commercial firms. The program also emphasizes the development of professional attitudes and interpersonal skills expected of health care professionals.

This program is fully accredited by the Committee on Veterinary Technician Education and Activities of the American Veterinary Medical Association. Graduates are eligible to take the Veterinary Technician National Examination administered by the Oregon Board of Veterinary Medical Examiners. Graduates are also eligible for licensure in other states.

This is a seven-term, full time program. All Veterinary Technology courses must be taken in the sequential order in the course of study below. All Veterinary Technology courses must be completed with a C or better to qualify for continuation in the program.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Veterinary Technology

PREREQUISITES AND REQUIREMENTS

College placement tests are administered through assessment centers.

1. Completion of WR 121 or documented equivalent college level work prior to admission.
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

THEATRE ARTS

Cascade Campus
Moriarty Arts and Humanities Building
971-722-5314

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

Sylvania Campus
Performing Arts Center
971-722-4323

Box Office 971-722-4949
www.pcc.edu/programs/theatre/

DESCRIPTION

The PCC Theatre Arts (TA) program offers a wide variety of courses on the Sylvania, Cascade and occasionally on the Rock Creek campuses.

The Sylvania campus’ Performing Arts Center (PAC) houses a state-of-the-art proscenium multi-use theater and facility, which doubles as PCC’s most popular rental facility for over 800 annual events. The Sylvania TA program mounts three fully staged productions each academic year, while offering nearly all of the current courses in the TA catalog. Our popular productions utilize student actors, technicians, crew and designers who collaborate with professional staff, faculty and guest artists. The TA courses at Sylvania prepare community college students in the arts of fundamentals and advanced acting, beginning and advanced improvisation, scenic, lighting costume and make-up design, backstage crew positions, stage management and stagecraft. Our students often go on to

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, effective use of the language to communicate, 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.

VETERINARY TECHNOLOGY

Rock Creek Campus
Building 7, Room 202
971-722-7461

www.pcc.edu/vet

CAREER AND PROGRAM DESCRIPTION

Veterinary technicians work with veterinarians and are skilled and knowledgeable in the practical application of aspects involved in the care and handling of animals, clinical laboratory procedures, animal diseases, animal nutrition, pharmacology, radiography, anesthesiology and medical and surgical assistance. Graduates are prepared to function as competent veterinary technicians in small and large animal hospitals and clinics, laboratory animal research facilities, educational institutions, animal shelters, military service and commercial firms. The program also emphasizes the development of professional attitudes and interpersonal skills expected of health care professionals.

This program is fully accredited by the Committee on Veterinary Technician Education and Activities of the American Veterinary Medical Association. Graduates are eligible to take the Veterinary Technician National Examination administered by the Oregon Board of Veterinary Medical Examiners. Graduates are also eligible for licensure in other states.

This is a seven-term, full time program. All Veterinary Technology courses must be taken in the sequential order in the course of study below. All Veterinary Technology courses must be completed with a C or better to qualify for continuation in the program.

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE
Veterinary Technology

PREREQUISITES AND REQUIREMENTS

College placement tests are administered through assessment centers.

1. Completion of WR 121 or documented equivalent college level work prior to admission.
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, its equivalent or higher with a C or better.
5. Completion of BI 112, its equivalent or higher with a C or better.
6. Completion of MP 111 prior to admission.

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 100 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program advisors for course planning.

VETERINARY TECHNOLOGY DEGREE CREDIT SUMMARY
VT General Education
Total Credits: 84 16 100

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

First Term
VT 101 Introduction to Veterinary Technology 2
VT 104 Facility Ward Care 2
VT 105 Comparative Veterinary Anatomy and Physiology I 4
VT 121 Basic Animal Science 4
General Education 4

Second Term
VT 102 Animal Nursing and Restraint 3
VT 106 Comparative Veterinary Anatomy and Physiology II 4
VT 107 Veterinary Parasitology and Pathology 3
VT 108 Pharmaceutical Mathematics I 1
General Education 2

Third Term
VT 103 Animal Health Record Systems 3
VT 110 Specimen Collection Laboratory 1
VT 111 Hematology and Urinalysis 5
General Education 4

Fourth Term
VT 109 Radiation Safety 2

Fifth Term
VT 112 Clinical Laboratory Procedures 5
VT 113 Veterinary Microbiology 3
VT 280A Cooperative Education: Clinic I 4
General Education 4

Sixth Term
VT 201 Anesthesiology 3
VT 204 Applied Radiography 3
VT 205 Veterinary Pharmacology 4
VT 211 Pharmaceutical Mathematics II 1

Seventh Term
VT 202 Surgical Nursing and Lab Animal Procedures 4
VT 207 Public Health and Sanitation 2
VT 208 Small Animal Diseases 4
VT 280B Cooperative Education: Clinic II 4

Total Credits: 100

VIDEO PRODUCTION
See Multimedia (p. 142)

WELDING TECHNOLOGY
Rock Creek Campus
Building 2, Room 131 - Shop
Building 2, Room 230 - Office
971-722-7600 or 971-722-7331
Swan Island
Welding Center
5555 N Channel Ave
503-247-1724

CAREER AND PROGRAM DESCRIPTION
Welding is a skill used by many trades: sheet metal workers, ironworkers, boilermakers, carpenters, steamfitters, glaziers and repair and maintenance personnel in applications ranging from the home hobbyist to heavy fabrication of bridges, ships and many other projects. A variety of welding processes are used to join units of metal.

The Welding Technology Program has been developed specifically as an open entry and open exit (OE&OE) program. The program is designed to fit the needs of a student (take as few or as many courses as desired), and have the following characteristics: open entry (enter at any time during the term); self-paced (learn at your own pace); flexible (select your own attendance schedule); individualized (a program can be tailor-made to fit specific needs); and, open exit (leave the program when you have met your training goals/needs).


Consult a program advisor through the department to help plan a course of study that will allow you to achieve your educational goals.
PROGRAMS & DISCIPLINES

DEGREES AND CERTIFICATES OFFERED

ASSOCIATE OF APPLIED SCIENCE DEGREE

Welding Technology

TWO-YEAR CERTIFICATE

Welding Technology - Suspended

LESS THAN ONE-YEAR CERTIFICATE

Welding Technology

FLUX CORED ARC WELDING

Gas Metal Arc Welding

Gas Tungsten Arc Welding

Pipe Welding

Shielded Metal Arc Welding

Welding Technology

PREREQUISITES AND REQUIREMENTS

Contact department for program advising.

WELDING TECHNOLOGY AAS DEGREE

Minimum 97 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 65 competency. Students should consult with program/academic advisors for course planning.

WELDING PROGRAM ELECTIVES

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<th>Course Code</th>
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<th>Credits</th>
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<td>Shielded Metal Arc Welding: Mild Steel IV (E6011)</td>
<td>3</td>
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<tr>
<td>WLD 116A</td>
<td>Beginning Shielded Metal Arc Welding</td>
<td>3</td>
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<tr>
<td>WLD 116B</td>
<td>Basic Welding Practice</td>
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</tr>
<tr>
<td>WLD 126A</td>
<td>Beginning Gas Tungsten Arc Welding (Heliarc)</td>
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<td>WLD 126B</td>
<td>Basic Gas Tungsten Arc Welding (Heliarc)</td>
<td>3</td>
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<td>WLD 136A</td>
<td>Beginning Wire Welding</td>
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<td>WLD 136B</td>
<td>Basic Wire Welding</td>
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<tr>
<td>WLD 146A</td>
<td>Beginning Pipe Welding Practice</td>
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<td>WLD 146B</td>
<td>Basic Pipe Welding Practice</td>
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<tr>
<td>WLD 156A</td>
<td>Beginning Oxy-Acetylene Welding Practice</td>
<td>3</td>
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<td>WLD 156B</td>
<td>Basic Oxy-Acetylene Welding Practice</td>
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<td>Beginning Weld Practice Metal Sculpting</td>
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<td>WLD 166B</td>
<td>Basic Weld Practice Metal Sculpting</td>
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<td>WLD 176A</td>
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<td>WLD 190C</td>
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<td>WLD 216</td>
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<td>WLD 253</td>
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<td>WLD 254</td>
<td>SMAW Certification Practice 3/8&quot; Mild Steel (E7018)</td>
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<td>WLD 256</td>
<td>Preparation for Pipe Certification</td>
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<td>WLD 256A</td>
<td>Intermediate Oxy-Acetylene Welding Practice</td>
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<td>WLD 256B</td>
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<td>WLD 257</td>
<td>Preparation for Pipe Certification</td>
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<td>WLD 262</td>
<td>Basic Fabrication II</td>
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WELDING TECHNOLOGY DEGREE CREDIT SUMMARY

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WELDING DEGREE COURSES

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<td>WLD 102</td>
<td>Blueprint Reading</td>
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<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
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<td>Flux-Core Arc Welding I (Gas Shielded)</td>
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<td>Flux-Core Arc Welding II (Self Shielding)</td>
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**PROGRAMS & DISCIPLINES**

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<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>WLD 266A</td>
<td>Intermediate Weld Practice Metal Sculpting</td>
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<td>WLD 266B</td>
<td>Advanced Weld Practice Metal Sculpting</td>
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<tr>
<td>WLD 271</td>
<td>Oxy-acetylene Welding Projects</td>
<td></td>
</tr>
<tr>
<td>WLD 276A</td>
<td>Intermediate Fabrication Welding Practice</td>
<td>1</td>
</tr>
<tr>
<td>WLD 276B</td>
<td>Advanced Fabrication Welding Practice</td>
<td>1</td>
</tr>
<tr>
<td>WLD 280A</td>
<td>Cooperative Education: Welding</td>
<td>1</td>
</tr>
<tr>
<td>WLD 280B</td>
<td>Cooperative Education: Welding - Seminar</td>
<td>1</td>
</tr>
<tr>
<td>WLD 286A</td>
<td>Intermediate Certification Welding Practice</td>
<td>1</td>
</tr>
<tr>
<td>WLD 286B</td>
<td>Advanced Certification Welding Practice</td>
<td>1</td>
</tr>
<tr>
<td>WLD 290</td>
<td>Submerged Arc Welding</td>
<td>2</td>
</tr>
<tr>
<td>WLD 295</td>
<td>Sculpture Welding II</td>
<td>4</td>
</tr>
</tbody>
</table>

1 A maximum of 6 credits from courses with a letter designation after them (such as 126B, 136A) may be used towards completion of the 12 credit elective requirement. The Welding Department Chair may allow exceptions to this rule.

**LESS THAN ONE-YEAR CERTIFICATE**

Welding Technology (p. 161)
Flux Cored Arc Welding (p. 161)
Gas Metal Arc Welding (p. 161)
Gas Tungsten Arc Welding (p. 161)
Pipe Welding (p. 161)
Shielded Metal Arc Welding (p. 161)

**WELDING TECHNOLOGY LESS THAN ONE-YEAR CERTIFICATE**

Minimum 44 credits. Students must meet certificate requirements. The Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 101</td>
<td>Welding Processes &amp; Applications</td>
<td>4</td>
</tr>
<tr>
<td>WLD 102</td>
<td>Blueprint Reading</td>
<td>4</td>
</tr>
<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>
<td>4</td>
</tr>
<tr>
<td>WLD 113</td>
<td>Shielded Metal Arc Welding: Mild Steel II (E7018)</td>
<td>4</td>
</tr>
<tr>
<td>WLD 114</td>
<td>Shielded Metal Arc Welding: Mild Steel III (E6011)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
<td>3</td>
</tr>
<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 151</td>
<td>SMAW Certification Practice: Unlimited Thickness Mild Steel</td>
<td>3</td>
</tr>
<tr>
<td>WLD 152</td>
<td>Wire Welding Certification Practice</td>
<td>6</td>
</tr>
<tr>
<td>Total Credits</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>

**FLUXED CORED ARC WELDING**

Minimum 12 credits. Students must meet certificate requirements. The Fluxed Cored Arc Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 136A</td>
<td>Beginning Wire Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 136B</td>
<td>Basic Wire Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**GAS METAL ARC WELDING**

Minimum 12 credits. Students must meet certificate requirements. The Gas Metal Arc Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
<td>3</td>
</tr>
<tr>
<td>WLD 136A</td>
<td>Beginning Wire Welding-Pulse</td>
<td>3</td>
</tr>
<tr>
<td>WLD 136B</td>
<td>Basic Wire Welding</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**PIPE WELDING**

Minimum 12 credits. Students must meet certificate requirements. The Pipe Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 146A</td>
<td>Beginning Pipe Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 146B</td>
<td>Basic Pipe Welding</td>
<td>3</td>
</tr>
<tr>
<td>WLD 256</td>
<td>Preparation for Pipe Certification I</td>
<td>3</td>
</tr>
<tr>
<td>WLD 257</td>
<td>Preparation for Pipe Certification II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**SHIELDED METAL ARC WELDING**

Minimum 15 credits. Students must meet certificate requirements. The Shielded Metal Arc Welding Technology Certificate is a related certificate. All courses within the certificate are in the Welding Technology AAS Degree.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>DESCRIPTION</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<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>
<td>4</td>
</tr>
<tr>
<td>WLD 113</td>
<td>Shielded Metal Arc Welding: Mild Steel II (E7018)</td>
<td>4</td>
</tr>
<tr>
<td>WLD 114</td>
<td>Shielded Metal Arc Welding: Mild Steel III (E6011)</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

**WOMEN’S STUDIES (WS)**

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

Rock Creek Campus
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. 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.

WRITING

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

Rock Creek Campus
Building 3, Room 201
971-722-7522 or 971-722-7806

Southeast Campus
Mt. Scott Hall (MSH), Room 104
971-722-6146

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4266

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, WR 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’s Creative Writing Program offers students one of the largest selections of creative writing courses in Oregon. These include poetry, fiction, creative nonfiction and screenwriting workshops and a publishing course that allows students to edit and design both their own chapbooks and a campus literary magazine. Students may also pursue a Creative Writing Focus Award (p. 164). Placement into WR 121 is a prerequisite for creative writing classes; completion of WR 121 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.
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, as they are not officially recognized by the state, and do not appear on transcripts.

ASIAN STUDIES FOCUS AWARD

www.pcc.edu/programs/asian-studies/

The courses included in PCC’s Asian Studies Focus Award foster a rich understanding and appreciation of the cultures of Asia. A minimum of sixteen credits from the courses listed below entitles students to receive an Asian Studies Focus Award, which will show prospective employers and transfer colleges a foundational focus on Asia. These studies encourage broader reflections about the nature of culture and how it shapes everything from world views to daily life. Above all, the focus award enables students to develop a multidimensional perspective on Asia with its many cultures and to enhance their own life experience as well.

ASIAN STUDIES FOCUS AWARD REQUIREMENTS

To receive the Asian Studies Focus Award, a student will complete at least 16 credits from the following choices, which must:

- Include no more than two courses from one discipline (e.g. Art, Japanese, Literature)
- Cover more than one geographic area of Asia
- Include no more than one general course, in which the student should focus on Asian topics. (ATH 103; BA 203; COMM 140; GEO 107; MUS 108; PS 204; PS 205; R 210; 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:

<table>
<thead>
<tr>
<th>Area</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>ATH 103</td>
<td>Introduction to Cultural Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>Art</td>
<td>ART 203</td>
<td>History of Asian Art (India)</td>
<td>4</td>
</tr>
<tr>
<td>Art</td>
<td>ART 208</td>
<td>History of Asian Art (China)</td>
<td>4</td>
</tr>
<tr>
<td>Art</td>
<td>ART 209</td>
<td>History of Asian Art (Japan)</td>
<td>4</td>
</tr>
<tr>
<td>Business Administration</td>
<td>BA 203</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>Chinese</td>
<td></td>
<td>All language and culture credit courses may apply to the focus award. They vary from 3-5 credits.</td>
<td></td>
</tr>
<tr>
<td>Communication Studies</td>
<td>COMM 140</td>
<td>Introduction to Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>Geography</td>
<td>GEO 107</td>
<td>Geography of Global Issues</td>
<td>4</td>
</tr>
<tr>
<td>History</td>
<td>HST 105</td>
<td>History of India and South Asia Region</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HST 106</td>
<td>History of Korea and Japan</td>
<td>4</td>
</tr>
</tbody>
</table>

All language and culture credit courses may apply to the focus award. They vary from 1-6 credits

<table>
<thead>
<tr>
<th>Area</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature</td>
<td>ENG 207</td>
<td>World Literature - Asian (India)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENG 208</td>
<td>World Literature - Asian (China)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENG 209</td>
<td>World Literature - Asian (Japan)</td>
<td>4</td>
</tr>
<tr>
<td>Music</td>
<td>MUS 108</td>
<td>Music Cultures of the World</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy</td>
<td>PHL 210</td>
<td>Introduction to Asian Philosophy</td>
<td>4</td>
</tr>
<tr>
<td>Political Science</td>
<td>PS 204</td>
<td>Comparative Political Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PS 205</td>
<td>Global Politics: Conflict &amp; Cooperation</td>
<td>4</td>
</tr>
<tr>
<td>Religious Studies</td>
<td>R 201</td>
<td>Asian Religions</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>R 210</td>
<td>World Religions</td>
<td>4</td>
</tr>
<tr>
<td>Women’s Studies</td>
<td>WS 201</td>
<td>Women of the World</td>
<td>4</td>
</tr>
</tbody>
</table>

OTHER

As part of the process of pursuing the Asian Studies Focus Award, students are encouraged to work with an Asian Studies committee member as a mentor. For more information as the award and to connect with a mentor, contact Bryan Hull, bhull@pcc.edu.

The Asian Studies Focus Award satisfies Portland State University’s International Studies requirement, INT 216a, Introduction to Asian Studies, with some restrictions. PCC is a Regional Center of the East-West Center’s Asian Studies Development Program (ASDP). More information can be found at www.eastwestcenter.org.

BLACK STUDIES FOCUS AWARD

PCC’s Black Studies courses contribute to the understanding of the unique issues that people of African ancestry face in the modern world by taking an interdisciplinary approach to examine the economics, history, politics, culture, literature, and art of the African Diaspora.

PCC offers one of the largest selections of courses that reflect the Black experience. This focus award enhances existing degrees and certificates and shows prospective employers and transfer colleges a foundational focus on the black experience and multicultural issues.

In addition, students completing the Africa series of courses build a foundation for International Studies. Students completing the award will be eligible for the lower division course requirements for Portland State University’s Black Studies degree.

Students who are applying for the Black Studies Focus Award should call 971-722-5637.

BLACK STUDIES FOCUS AWARD REQUIREMENTS

To receive the Black Studies Focus Award, a student will complete at least 16 credits from the following choices, with no more than two courses from one discipline.

Courses may be selected from the following:

<table>
<thead>
<tr>
<th>Area</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>ENG 256</td>
<td>African-American Literature</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENG 257</td>
<td>African-American Literature</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>ENG 258</td>
<td>African-American Literature</td>
<td>4</td>
</tr>
<tr>
<td>Humanities</td>
<td>HUM 204</td>
<td>History of Africa</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HUM 205</td>
<td>African Literature</td>
<td>4</td>
</tr>
</tbody>
</table>
FOCUS AWARDS

The Communication Studies Focus Award recognizes students who have gained considerable background in Communication Studies as part of their certificate or transfer degree program. The award is granted to students who have completed the required combination of Communication Studies courses. This award is especially useful for students seeking to minor or major in Communication Studies at Portland State University or any Oregon college or university. Students who wish to transfer should check with the specific institution for course transferability.

Students who are applying for the Communication Studies Focus Award should fill out the online application form:

http://www.pcc.edu/programs/communication-studies/focus-award.html

COMMUNICATION STUDIES FOCUS AWARD REQUIREMENTS

1. Students must complete four or more courses all with a C or better:
   a. Two required courses
   b. Two elective courses

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Introduction to Communication</td>
<td>4</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
</tbody>
</table>

Choose four or more courses from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 105</td>
<td>Listening</td>
<td>4</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Voice and Articulation</td>
<td>3</td>
</tr>
<tr>
<td>COMM 112</td>
<td>Persuasive Speaking</td>
<td>4</td>
</tr>
<tr>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
<td>4</td>
</tr>
<tr>
<td>COMM 140</td>
<td>Introduction to Intercultural Communication</td>
<td>4</td>
</tr>
<tr>
<td>COMM 212</td>
<td>Voice &amp; Diction</td>
<td>4</td>
</tr>
<tr>
<td>COMM 214</td>
<td>Interpersonal Communication: Process and Theory</td>
<td>4</td>
</tr>
</tbody>
</table>

Creative Writing Focus Award

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. Focus Awards are not to be confused with degrees or certificates, are not officially recognized by the state, and do not appear on transcripts.

PROGRAM REQUIREMENTS

Students will complete 20 credits that includes:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR 240</td>
<td>Creative Writing - Nonfiction</td>
<td>4</td>
</tr>
<tr>
<td>WR 241</td>
<td>Creative Writing - Fiction</td>
<td>4</td>
</tr>
<tr>
<td>WR 242</td>
<td>Creative Writing - Poetry</td>
<td>4</td>
</tr>
<tr>
<td>WR 243</td>
<td>Creative Writing - Script Writing</td>
<td>4</td>
</tr>
</tbody>
</table>
FOCUS AWARDS

4 credits of
WR 246 Advanced Creative Writing, Editing & Publishing (or waiver - see notes)

4 credits of advanced coursework
WR 244 Advanced Creative Writing - Fiction
WR 245 Advanced Creative Writing - Poetry
WR 247 Advanced Creative Writing - Scriptwriting
WR 248 Advanced Creative Writing - Nonfiction
WR 246 Advanced Creative Writing, Editing & Publishing (for a second time)

4 credits of diversity literature coursework
ENG 207 World Literature - Asian (India)
ENG 208 World Literature - Asian (China)
ENG 209 World Literature - Asian (Japan)
ENG 213 Latin American Literature
ENG 222 Images of Women in Literature
ENG 240 Introduction to Native American Literatures
ENG 244 Introduction to Asian-American Literature
ENG 250 Introduction to Folklore and Mythology
ENG 256 African-American Literature
ENG 257 African-American Literature
ENG 258 African-American Literature
ENG 260 Introduction to Women Writers
ENG 265 International Political Poetry
HUM 205 African Literature

Note: WR 246 may be waived, subject to approval by the faculty contact person on your campus, on the grounds of schedule conflict or equivalent experience. A waiver requires students to take another creative writing class, beginning or advanced, that they have not taken before.

Students completing all three terms of WR 246 receive a Emphasis Plus.

All advanced creative writing courses and literature classes must be taken at Portland Community College.

WR 246 may be taken three times for credit.

Students applying for the Creative Writing Focus Award should contact the administrative liaison for the focus award at 971-722-4266.

HEALTH STUDIES FOCUS AWARD

The Health Studies Award provides students with an introductory body of knowledge in Health Studies to prepare them for further academic study and transfer to a four-year institution. Benefits of this award include:

• Opportunities to build their understanding of the complex factors, forces and institutions that influence individual, community, environmental and global health;
• Academic support, guidance, and encouragement through faculty-student mentoring; and
• Opportunities to network with local four-year universities and colleges.

The Health Studies Award prepares students to pursue health studies and related programs at the bachelor level. In Oregon, these programs can be found at Portland State University, Oregon State University, Western Oregon University and 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:

4 credits of

• 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
Choose one of the following:
HE 242 Stress and Human Health 4
HE 250 Personal Health 3
HE 251 Community and Public Health Issues 4
HE 295 Health and Fitness for Life 2

& PE 295 Health and For Life Lab

Elective Health Courses (one required, addition may be selected)
HE 212 Women’s Health 4
HE 213 Men’s Health 4
HE 255 Film and Public Health 4
HE 264 Health, Food Systems, and the Environment 3
HE 278 Human Health and the Environment 3

Approved Related Courses
ESR 171 Environmental Science: Biological Perspectives 4
FN 225 Nutrition 4
PSY 215 Human Development 4
PSY 231 Human Sexuality 4
SOC 231 Sociology of Health & Aging 4

1 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.

HISTORY FOCUS AWARD

The History Focus Award is designed to foster a rich understanding and appreciation of history as a discipline that is engaged in dialogues with the past in order to interpret human experiences over time. This award supports students interested in history by offering the opportunity to study a wide variety of courses covering different areas, eras, and topics in history.

Students completing the award will be able to use a maximum of 16 lower-division history credits towards the Portland State University History Major requirements. Students planning to transfer to other universities should check with the specific institution for course transferability.

To apply for the History Focus Award contact 971-722-4092.

HISTORY FOCUS AWARD REQUIREMENTS

To receive the History Focus Award, a student must complete 16 credits. Courses must be selected from the following:

Western Civilization
HST 101 History of Western Civilization: Ancient to Medieval 4
HST 102 Western Civilization: Medieval to Modern 4
HST 103 Western Civilization: Modern Europe 4
Western Civilization Honors
HST 101H History of Western Civilization: Ancient to Medieval Honors 4
HST 102H History of Western Civilization: Medieval to Modern - Honors 4
HST 103H History of Western Civilization: Modern Europe - Honors 4

Middle Eastern and Asian History
PEACE AND CONFLICT FOCUS AWARD

Students who are applying for the Peace and Conflict Focus Award should call 971-722-5152.

PACS I FOCUS AWARD REQUIREMENTS
1. A minimum of 18 credits, including PS 211 (or equivalent.)
2. At least one course from each of three course categories (out of the five available course categories.)

PACS II FOCUS AWARD REQUIREMENTS
1. A minimum of 30 credits; includes PS 211 (or equivalent), at least one credit in cooperative education (PS 280C or equivalent) and a two-credit cooperative education seminar (PS 280B or equivalent.)
2. At least one course from each of the five course categories, with no more than three of these courses coming from any one subject area discipline, and at least two coming from outside of the social sciences.

PACS III FOCUS AWARD REQUIREMENTS
1. A minimum of 45 credits, includes PS 211 (or equivalent), at least one credit in cooperative education (PS 280C or equivalent), and a two credit cooperative education seminar (PS 280B or equivalent.)
2. At least one course from each of the five course categories, with no more than four of these courses coming from any one subject area discipline, and at least three coming from outside of the social sciences.
3. Inclusion of at least three courses concentrated in at least one course category.

Integrative Courses
4 PS 211 Peace and Conflict
4 PS 280B Cooperative Education: Community Service & Action Seminar
4 PS 280C Cooperative Education: Peace and Conflict

Category I: Personal to Societal Peace and Conflict
4 ATH 103 Introduction to Cultural Anthropology
4 EC 216 Labor Markets: Economics of Gender, Race, and Work

Category II: Race and Gender, and Peace and Conflict
4 ENG 261 Literature of Science Fiction
4 HST 203 History of the United States 1914 to present
4 PHL 202 Ethics
4 PS 201 U.S. Government
4 PSY 216 Social Psychology
4 SOC 204 Sociology in Everyday Life
4 SOC 205 Social Change in Societies
4 SOC 206 Social Problems

Category III: Environmental and Ecological Peace and Conflict
4 ENG 212 Biography and Autobiography
4 ENG 222 Images of Women in Literature
4 ENG 240 Introduction to Native American Literatures
4 ENG 258 African-American Literature
4 ENG 260 Introduction to Women Writers
4 HST 205 History of Women in the U.S.: 1877 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

Category IV: Global Peace and Conflict
4 ATH 214 Human Environments: Ecological Aspects
4 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 World Regional Geography
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

Category V: Communication: Peace and Conflict
4 COMM 100 Introduction to Communication
FOCUS AWARDS

SUSTAINABILITY FOCUS AWARD

The Sustainability Focus award recognizes students who have completed a broad range of sustainability related courses. The award is designed to encourage students to learn to see environmental issues from multiple perspectives and to increase their experience in this multi-disciplinary topic. The earning of this focus award can demonstrate to potential employers and transfer colleges that the student has a deep and broad understanding of sustainability issues.

To receive this focus award, please call (971) 722-4419 or email sustainability@pcc.edu. Focus Awards are not to be confused with degrees or certificates, are not officially recognized by the state, and do not appear on transcripts.

SUSTAINABILITY FOCUS AWARD REQUIREMENTS

1. Complete a minimum of 16 credits.
2. Include courses from at least three of the following different disciplines.

Biology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 101</td>
<td>Biology</td>
</tr>
<tr>
<td>BI 141</td>
<td>Habitats: Life of the Forest</td>
</tr>
<tr>
<td>BI 142</td>
<td>Habitats: Marine Biology</td>
</tr>
<tr>
<td>BI 143</td>
<td>Habitats: Fresh Water Biology</td>
</tr>
<tr>
<td>BI 145</td>
<td>Intro. to Fish and Wildlife Conservation and Management</td>
</tr>
<tr>
<td>BI 160</td>
<td>Ecology/Field Biology: Coast</td>
</tr>
<tr>
<td>BI 163</td>
<td>Organic Gardening</td>
</tr>
<tr>
<td>BI 164</td>
<td>Bird ID and Ecology</td>
</tr>
<tr>
<td>BI 200A</td>
<td>Principles of Ecology: Field Biology</td>
</tr>
<tr>
<td>BI 200B</td>
<td>Principles of Ecology: Field Biology</td>
</tr>
<tr>
<td>BI 200C</td>
<td>Principles of Ecology: Field Biology</td>
</tr>
<tr>
<td>BI 213</td>
<td>Principles of Biology</td>
</tr>
<tr>
<td>BI 280A</td>
<td>Cooperative Education: Biology</td>
</tr>
</tbody>
</table>

ESR 140 Introduction to Environmental Sustainability

Environmental Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESR 141</td>
<td>Introduction to Individual Sustainability</td>
</tr>
<tr>
<td>ESR 171</td>
<td>Environmental Science: Biological Perspectives</td>
</tr>
<tr>
<td>ESR 172</td>
<td>Environmental Science: Chemical Perspectives</td>
</tr>
<tr>
<td>ESR 173</td>
<td>Environmental Science: Geological Perspectives</td>
</tr>
<tr>
<td>ESR 201</td>
<td>Applied Environmental Studies: Science/Policy Consideration</td>
</tr>
<tr>
<td>ESR 203</td>
<td>Applied Environmental Studies: Project Health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 230</td>
<td>Environmental Literature</td>
</tr>
<tr>
<td>ENG 269</td>
<td>Wilderness Literature</td>
</tr>
<tr>
<td>ENG 278</td>
<td>Human Health and the Environment</td>
</tr>
<tr>
<td>ENG 297</td>
<td>Environmental Politics and Policy</td>
</tr>
<tr>
<td>SOC 228</td>
<td>Introduction to Environmental Sociology</td>
</tr>
<tr>
<td>SOC 280A</td>
<td>Cooperative Education: Sociology</td>
</tr>
</tbody>
</table>

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.

WOMEN’S STUDIES FOCUS AWARD

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

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

Rock Creek Campus
Building 3, Room 201
971-722-7539

www.pcc.edu/programs/womens-studies/

DESCRIPTION

Women’s Studies introduces the past and present achievements and experiences of women from an interdisciplinary and global perspective. The courses explore the decisive role that gender has played and continues to play in human societies and contributes to an understanding of women’s lives. Knowledge derived from women’s studies courses will enable people to analyze current problems that women face in the areas of employment, the family, domestic violence, health and the legal system. Since women comprise more than half of the world’s population, an understanding of their experiences, history, needs and abilities is an asset to students considering careers in such fields as education, social service, government, business, law, the ministry, journalism, health occupations and childcare.

Women’s Studies courses require college-level reading and writing skills.

All women’s studies courses meet Associate of Arts Oregon Transfer degree (AAOT) requirements. 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 & Clark College.

Students must complete 12 credits of Women’s Studies courses to receive a focus award. Students who have completed the requirements for the Award should apply at http://www.pcc.edu/programs/womens-studies/womens-studies-focus-award.html. For more information please contact: womens-studies@pcc.edu

Required Course

4 WS 101 Women’s Studies

Plus an additional 8 credits of Women’s Studies courses selected for the courses listed below.

Elective Courses
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 103</td>
<td>Women and Addiction</td>
<td>3</td>
</tr>
<tr>
<td>ART 210</td>
<td>Women in Art</td>
<td>4</td>
</tr>
<tr>
<td>COMM 237</td>
<td>Gender and Communication</td>
<td>4</td>
</tr>
<tr>
<td>EC 216</td>
<td>Labor Markets: Economics of Gender, Race, and Work</td>
<td>4</td>
</tr>
<tr>
<td>ENG 222</td>
<td>Images of Women in Literature</td>
<td>4</td>
</tr>
<tr>
<td>ENG 260</td>
<td>Introduction to Women Writers</td>
<td>4</td>
</tr>
<tr>
<td>HE 212</td>
<td>Women's Health</td>
<td>4</td>
</tr>
<tr>
<td>HST 204</td>
<td>History of Women in the U.S.: Pre-colonial to 1877</td>
<td>4</td>
</tr>
<tr>
<td>HST 205</td>
<td>History of Women in the U.S.: 1877 to Present</td>
<td>4</td>
</tr>
<tr>
<td>HST 225</td>
<td>History of Women, Sex, and the Family</td>
<td>4</td>
</tr>
<tr>
<td>PSY 231</td>
<td>Human Sexuality</td>
<td>4</td>
</tr>
<tr>
<td>PSY 232</td>
<td>Human Sexuality</td>
<td>4</td>
</tr>
<tr>
<td>SOC 218</td>
<td>Sociology of Gender</td>
<td>4</td>
</tr>
<tr>
<td>SPA 271A</td>
<td>Readings in Spanish Literature (Women Writers)</td>
<td>3</td>
</tr>
<tr>
<td>WS 201</td>
<td>Women of the World</td>
<td>4</td>
</tr>
<tr>
<td>WS 202</td>
<td>Women Working for Change: History, Theory and Practice</td>
<td>4</td>
</tr>
</tbody>
</table>
LEARNING OPTIONS

PCC offers a wide array of programs geared towards the non-traditional student. These programs range from pre-college or adult basic education to supplementary programs for adults in the workplace.

ADULT HIGH SCHOOL DIPLOMA

Cascade Campus
Student Services Building (SSB), Room 109
971-722-5416

Rock Creek Campus
Building 9, Room 102
971-722-7297

Southeast Campus
Mt. Tabor Hall (MTH), Room 152C
971-722-6240

Sylvania Campus
College Center (CC), Room 216
971-722-4473

The Adult High School Diploma program no longer accepts new students, effective August 1, 2013. Current AHSD students should contact department advisors to discuss individualized plans for program completion. PCC still offers the following options for students seeking high school completion:

- Adult Basic Education (ABE/GED), which prepares students to take the General Education Development (GED) State Test.
- GED State Tests, which are offered weekly through PCC.
- PCC Prep Programs, which are limited to qualifying students who are 16-20 years of age and in select school districts. PCC recommends that high school students first contact a counselor at their high school to discuss options.

CLIMB CENTER FOR ADVANCEMENT

CLIMB CENTER
971-722-6888
climb@pcc.edu
www.pcc.edu/climb

CLIMB – Continuous Learning for Individuals, Management and Business – serves the needs of working professionals, individuals, managers, and businesses who want to accelerated, specialized, high-quality training.

The CLIMB Center for Advancement delivers the training and development programs backed by the experience and size of Portland Community College. With access to the resources of PCC, CLIMB is a hub of expertise, talent and training opportunities, using trainers who are industry experts and who bring real world experience to the classroom.

CLIMB PROFESSIONAL DEVELOPMENT AND TRAINING
971-722-6686
professional.training@pcc.edu
www.pcc.edu/climb/training

Professional Development and Training provides professional quality training and development services. These services help people and organizations reach their peak performance to maximize profitability and sustainability in the global marketplace. Professional Development and Training is the one source partner for responsive, relevant and results-oriented solutions in leadership, sales, communication, customer service, IT/software and trades. Programs are tailored to meet clients’ needs and delivered at times and locations convenient to the client.

CLIMB FOR HEALTH CARE PROFESSIONALS
971-722-6653
www.pcc.edu/climb/health

The Institute for Health Care Professionals offers timely, relevant and innovative solutions for health care providers. Educational opportunities offered are: professional development/continuing education courses; certification/re-certification; entry level health care training; customized training; conference management services and American Heart Association (AHA) training through its AHA designated Community Training Center. Choose from traditional classroom format, customized on-site training or online education (both self-directed and interactive).

LIFE BY DESIGN NW
971-722-6650
lifebydesign@pcc.edu
www.pcc.edu/climb/life

Life by Design NW redefines how to successfully navigate workplace transitions and meaningful retirement. Life by Design NW training programs and services address the needs of the changing workforce and provide opportunities for giving back to the community. Programs are targeted at the Boomer 50-plus population to include life and retirement planning, skills based volunteering, affinity group gatherings, and special events intended to empower people in finding their purpose and passion.

SMALL BUSINESS DEVELOPMENT CENTER (SBDC)
971-722-5080
sbdc@pcc.edu
www.pcc.edu/climb/small-business/
www.bizcenter.org

CLIMB’s Small Business Development Center (SBDC) is a hub of entrepreneur and economic development for small businesses throughout the PCC district. Utilizing a business development pathway model which guides the entrepreneur through the stages of business development – thinking, launching, growing, reinventing, and exiting – the SBDC challenges and inspires small business owners to grow healthy businesses; creating jobs, increasing sales and accessing capital. The SBDC combines business education with ongoing business education advising to create an environment that supports small business owners in achieving their goals. Services include: business advising, directed self-study, entrepreneur development, small business management programs, and international trade advising and education.

DEVELOPMENTAL EDUCATION

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

Rock Creek Campus
Building 2, Room 212
971-722-7414

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

Sylvania Campus
Social Science Building (SS), Room 215
971-722-4192

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 Campus and Sylvania. For most developmental education courses, financial aid is available to those who qualify. For more information, contact the Financial Aid Office.

For accurate placement, students are required to take reading, writing and mathematics placement tests. For specific information, students should contact the nearest campus testing center.

LEARNING CENTERS
Developmental English and mathematics instruction are offered on an individualized basis through the Learning Centers at Rock Creek and Sylvania. Instruction is available by computer, videotape, lecture, self-paced format, tutoring and other teaching modes.

TUTORING
Free tutorial assistance is offered to students in many academic programs. Students may “drop-in” during any regularly scheduled tutoring time. For more information, contact the Learning Centers at Cascade, Rock Creek, Southeast Campus or Sylvania.

TRANSFER COURSES
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.

DEVELOPMENTAL ENGLISH
Consult the Course Descriptions (p. 33) section of the catalog for complete course titles and descriptions.

DEVELOPMENTAL MATHEMATICS
For developmental and/or pre-college Mathematics courses, see Mathematics (p. 132). Consult the Course Descriptions (p. 132) section of the catalog for complete course titles and descriptions.

OTHER DEVELOPMENTAL EDUCATION COURSES
Consult the Course Descriptions section of the catalog for complete course titles and descriptions.

DISTANCE EDUCATION
www.pcc.edu/about/distance/
Distance Education provides students with an opportunity to earn college credit by participating in a variety of online and technology based courses. Online courses meet the same outcomes as on-campus courses and the credits are similarly transferable to other colleges and universities. Students also follow the same admissions and registration procedures as on-campus students. Instead of attending on-campus classes, students participate in an orientation, online discussions and activities, complete readings in textbooks and study guides, take periodic exams and in some cases write papers, reports, or do group work with other students. Each course has an instructor for students to contact when they need assistance. Distance Education offers the following types of courses:

WEB CLASSES
Web classes are by far the most popular distance learning option at PCC. Web courses utilize an online learning environment where students work independently through online coursework. Students and instructors interact through discussions and email. 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.

Important Change for 2015
Starting Winter 2015, all PCC students who have not taken an online course at PCC will need to complete a mandatory online orientation before they can register for a for-credit Web course. Visit www.pcc.edu/about/distance/ for the latest prerequisites and information for new distance learners.

TELECOURSES (TV)
971-722-4655
Telecourses are credit courses delivered using video. Telecourses provide students the opportunity to take a course independently and off campus. 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, including on-demand video streaming, cable TV broadcasts on Channel 27 (Comcast or Frontier FioS customers only), DVD purchase or rental (depending on availability), and on-campus library viewings.

Note: MTH 30 is currently the only course offered as a Telecourse.

TELEWEB (TVWEB)
971-722-4655
TeleWeb classes combine the elements of Telecourses and Web courses. TeleWeb lessons are mainly in video format, with online course content that includes lessons, discussions, quizzes, and other activities that require Internet access and basic computer use skills. Several viewing options are available for each Telecourse video series, including on-demand video streaming, cable TV broadcasts on
Returning to the ESOL Program After One Year

If a student has been gone from the ESOL program for 1 year, then the student needs to retake the Compass ESL placement test and attend a placement/advising session before registering for any ESOL classes. If a student has taken the Compass ESL placement test but has not completed any ESOL classes during the past year, then the student will need to retake the Compass ESL placement test. A student may be able to successfully register online for an ESOL class, but if the student has been gone for 1 year, the student will not be allowed to remain in the ESOL class(es) until the student has retaken the Compass ESL placement test.

LINKS PROGRAMS

971-722-6213
www.pcc.edu/pccprep

Links Programs, formerly called 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 YES to College 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 High School Completion (p. 169), English for Speakers of Other Languages (p. 171) and Developmental Education (p. 169) sections in this catalog for related instruction.

PACTEC

Rock Creek Campus
Building 5, Room 116
971-722-7738
www.pcc.edu/pactec

PACTEC is an alliance of 11 school districts in Washington, East Columbia, and Multnomah counties, along with business and industry partners, and other educational and governmental institutions. PACTEC works with PCC and the other community college partners to bring about smooth transitions for our high schools students to assist in readying them for their next steps at PCC or for other training opportunities. PACTEC works with Career and Technical Education (CTE) Programs of Study and with all eligible secondary partners to offer articulated credit through the Dual Credit program at PACTEC through PCC.
LEARNING OPTIONS

PREPARE FOR COLLEGE PROGRAMS

ADULT BASIC EDUCATION (ABE) AND GENERAL EDUCATIONAL DEVELOPMENT (GED)

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

Rock Creek Campus
Building 7, Room 202
971-722-7539

Southeast Campus
Scott Hall, Room 103
971-722-6255

Sylvania Campus
Social Science Building (SS), Room 4
971-722-4741

www.pcc.edu/prepare/basic/

DESCRIPTION

A non-credit program for self-improvement designed to expand basic skills for students whose abilities range from under prepared to pre-college level. Development of reading, writing and math skills are emphasized, as well as life skills, employability, and technology. Students without a high school diploma also have the opportunity to prepare for the GED exams in four subject areas: social studies, science, reading and math.

ABE classes are open to anyone 18 or over who wants to improve basic reading, writing and math skills at the pre-college level. Students who are 16 or 17 must first obtain an official release from high school before attending class. To enroll, individuals must attend a two-part Orientation and Placement session. The sessions for both day and evening classes are conducted on a regular basis each term. Students needing special assistance such as an interpreter, a reader or a writer to participate in the orientation program should contact the Disabilities Services (971-722-4341) at least two weeks before the session is held.

COURSE OF STUDY

Upon entering an ABE class, students’ reading, writing and math abilities are assessed and individual programs of study are developed to guide them toward their personal academic goals. Large group, small group and individualized instruction are used to maximize academic gains. To help with their studies, students may need to purchase books. Day and evening classes are offered at all campuses and at many other locations in the community.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Location</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABE 0741</td>
<td>Adult Basic Education</td>
<td>Social Science Building (SS), Room 4</td>
<td>971-722-4741</td>
</tr>
<tr>
<td>ABE 0744</td>
<td>Adult Basic Education: Secondary (includes preparation for the GED test)</td>
<td>Social Science Building (SS), Room 4</td>
<td>971-722-4741</td>
</tr>
<tr>
<td>ABE 0782</td>
<td>Fundamentals of Mathematics</td>
<td>Social Science Building (SS), Room 4</td>
<td>971-722-4741</td>
</tr>
<tr>
<td>ABE 0783</td>
<td>Fundamentals of Reading</td>
<td>Social Science Building (SS), Room 4</td>
<td>971-722-4741</td>
</tr>
<tr>
<td>ABE 0784</td>
<td>Fundamentals of Writing</td>
<td>Social Science Building (SS), Room 4</td>
<td>971-722-4741</td>
</tr>
</tbody>
</table>

THE GED STATE EXAMINATION

The GED State Exam battery includes four tests:

1. Social studies: Content includes history, economics, political science, geography and behavioral science. Reading skills assessed include comprehension, application, analysis and evaluation. The test includes an extended-response written question.

2. 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. The test includes an extended-response written question.

3. Reading: Consists of non-fiction and fiction passages. Reading skills assessed include comprehension, application and analysis. The test includes an extended-response written question.

4. 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.

VOLUNTEER LITERACY TUTORING

Sylvania Campus
Social Science Building (SS), Room 03
971-722-4148

www.pcc.edu/vlt

Volunteer tutors are available to help with basic skills in reading, writing, math and speaking English. Some tutors can also help with GED preparations. Tutorial services are available at all PCC locations in addition to a variety of other community sites in Washington County.

WORKFORCE, ECONOMIC AND COMMUNITY DEVELOPMENT PROGRAMS

WORKFORCE DEVELOPMENT PROGRAMS

WorkSource Portland Metro Tualatin
7995 SW Mohawk
503-612-4200

WorkSource Portland Metro Beaverton
241 SW Edgeway Drive
Beaverton, OR 97006
971-722-2700

WorkSource Portland Metro Central
30 N Webster Street, Suite E
503-280-6046

The WorkSource Centers provide a comprehensive menu of workforce services to job seekers and businesses. The Centers provide a range of educational, employment and business services through a collaboration of partners, including Worksystems Inc., the Oregon Employment Department and the Department of Human Services. The Workforce development programs offered through the Centers (and at a variety of other locations) include:

- The Dislocated Workers Program (DWP), which helps people who have lost their jobs due to downsizing, layoffs, or plant closures.
- The Workforce Investment Act Adult Program, which provides services to unemployed or underemployed adults.
- The Steps to Success Program (STS), which provides services to individuals receiving public assistance.
- The Food Stamp Employment and Training Program, which provides services to individuals receiving food stamps.
- The Rapid Response Program, which begins working directly with employers and employees when a pending layoff or closure is announced to minimize the impact of job loss.

Through these programs the WorkSource Centers offer:

Services to job seekers including: a career center with computers, printers and fax machines for job searches; job listings; job search workshops; career counseling; assessment and testing; computer classes; Adult Basic Education; work experience opportunities,
LEARNING OPTIONS

English as a Second Language classes; career technical training and post-employment training.
Services to businesses including: new employee recruitment; job applicant screening and referral; skill testing; customized pre-employment training; Jobs Plus training, rapid response and out placement services.

MARGARET CARTER SKILL CENTER
Cascade Campus
Technology Education Building (TEB), Room 124
971-722-5450
www.pcc.edu/career/skill-center

The Margaret Carter Skill Center is dedicated to helping individuals become productive and contributing members of the community. The program offers guidance and encourages students to become self-directed, self-reliant, and to achieve self-efficacy in a learning environment that is respectful, welcoming, tolerant, and non-judgemental. The program enables individuals to function effectively as independent decision makers, to be effective citizens in society, and to be productive employees in the workplace.

Students must be 18 or older, attend an orientation, and complete an initial assessment before attending classes.

Skill Center students study communication, math, principles of technology, computer applications, employment opportunities, and industry orientation. These are some examples of what students learn:

- Communication skills, workplace computational and analytic skills.
- Trades technology and industry specific procedures in an applied/lab environment.
- Computer skills to create applicable business documents and correspondence.
- Goal setting, workplace habits, employment expectations and critical job search skills.

CAREER PATHWAYS PROGRAM
971-722-6271
www.pcc.edu/cp

The Career Pathways Program connects students to short term intensive educational programs (3-9 months) that prepare students to gain employment in a chosen field and continue their education toward an advanced certificate and/or degree.

In addition to their job-specific education students will receive comprehensive career services including:

- A one-term career planning course
- access to an internship in the student’s field of choice
- company tours and presentations
- personal career coaching services
- assistance identifying local companies with job openings
- help with completing applications, writing cover letters and resumes
- guidance on networking in person and via social media
- setting career goals and evaluating progress toward those goals

Pathways are available for students with a goal to upgrade their current skills or enter a new career field in areas such as healthcare, business services and trades. Several vocational trainings are also available for English language learners including health care and business services. Additional information can be found at www.pcc.edu/cp

INTERNATIONAL PROGRAMS

International Customized Contract Training
971-722-2889

Portland Community College’s International Contract Training Program (ICT) offers international business, industry and government traditional and customized training and educational services. ICT offers international organizations more than 60 traditional degree and certificate programs available through PCC as well as the option of customized training and educational services offered in the United States or abroad.
ACADEMIC REGULATIONS

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.

ACADEMIC FRESH START

Portland Community College (PCC) acknowledges that some students may not be prepared for success at the time they begin their academic careers. This can leave students with undesirable PCC academic transcripts.

Academic Fresh Start is intended for the student who has been unenrolled from PCC for seven or more years to remove an entire period of poor academic performance at PCC from the credits earned and Grade Point Average (GPA) calculation.

The student must be aware of the following limitations of this policy:

1. The student may only use Academic Fresh Start once and only if (s)he has not earned a certificate or degree from PCC. Once approved, the action is non-reversible.
2. Due to federal regulations, the Office of Financial Aid does not acknowledge Academic Fresh Start when calculating eligibility for student aid.
3. Transfer institutions may or may not acknowledge Academic Fresh Start. They may consider all credits and may calculate the entire student GPA for their purposes. It is at the discretion of the transfer institution to determine how they will interpret this policy.

The student seeking to apply for Academic Fresh Start policy must meet and understand the following conditions:

1. The student may only use Academic Fresh Start once and only if (s)he has not earned a certificate or degree from PCC. Once approved, the action is non-reversible.
2. The student must have a consecutive seven calendar year break (“stop out”) from PCC.
3. Upon reentry to PCC, and prior to the request for Academic Fresh Start, the student must complete a minimum of twelve credits at PCC, achieving a minimum of 2.5 GPA for this group of credits.
4. All PCC grades and credits prior to the student’s break from PCC are excluded under Academic Fresh Start. Exclusion includes good grades and poor grades.

COURSE CHALLENGE

Some courses offered at Portland Community College may be challenged. Course challenge is used when a student believes that he/she satisfies the course content and outcome objectives by other means. Course Challenge credit may not be used to meet the college residency requirement. No more than 25 percent of required degree or certificate credits can be met through course challenge.

Students who wish to challenge a course must accept the conditions as outlined in the course challenge policy which can be found at www.pcc.edu/resources/academic/standards-practices/academicstandardsandpractices--coursechallenge.html

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 online 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 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 and 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 (SAC) may specify whether a specific grade system option is available for each course in its domain.

TRADITIONAL GRADING 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. SACs 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. SACs may specify whether this grade system option is unavailable for each course in its control.
5. Degree or certificate requirements may only allow specific grade system options.

ATTENDANCE

1. Students are expected to attend all classes in which they are enrolled.
2. Repeated absences will affect a student’s grade.
3. Students are responsible for dropping or withdrawing from registered classes by completing the official drop/withdrawal process.
4. Students who stop attending and who fail to drop or withdraw from a class by the published deadline may earn a grade of F or NP according to the grade system option selected by the Student.
5. Students having excessive absences and who fail to drop or withdraw from a class by the published deadline may earn a grade of F or NP according to the grade system option selected by the Student.
6. Faculty must record the last date attended for students that earn an F or NP.
7. Faculty may assign a mark of NS (see “Marks”) and deny access to students who do not attend the first class session. These Students will be dropped by Registration.
8. Faculty may assign a mark of NS (see “Marks”) and deny access to Students who do not attend by the published drop deadline. These Students will be dropped by Registration.

9. Students who fail to attend or stop attending classes and fail to drop those classes by the published drop deadline will be responsible for the associated tuition and fees.

GRADE DEFINITIONS

**A SUPERIOR**
1. Honor grade indicating excellence.
2. Earned as a result of a combination of some or all of the following as outlined by the Instructor in the course handout: 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 regular attendance.
3. Probable continued success in sequential courses.

**C AVERAGE**
1. Standard college grade indicating successful performance earned as a result of a combination of some or all of the following as outlined by the Instructor in the course handout: satisfactory examination scores, generally accurate and prompt completion of assignments, ability to deal with abstract ideas, fair mastery of pertinent skills, and regular attendance.
2. Sufficient evidence of ability to warrant entering sequential courses.

**D SUBSTANDARD BUT RECEIVING CREDIT**
1. Substandard grade indicating the Student has met only minimum requirements as outlined by the Instructor in the course handout.
2. Earned as a result of some or all of the following: low examination scores; generally inaccurate, incomplete or late assignments; inadequate grasp of abstract ideas; barely acceptable mastery of pertinent skills; irregular attendance; insufficient evidence of ability to make advisable the enrollment in sequential courses.
3. Does not satisfy requirements for entry into courses where prerequisites are specified.

**F FAILURE**
1. Non-passing grade indicating failure to meet minimum requirements as defined by the instructor in the course handout earned as a result of some or all of the following: non-passing examination scores; inaccurate, incomplete or late assignments; failure to cope with abstract ideas; inadequate mastery of pertinent skills; and repeated absence from class.
2. Does not satisfy requirements for entry into courses where prerequisites are specified.
3. Faculty must record the last date attended for students that earn an F.

**P PASS**
2. A grade of P represents satisfactory achievement which would have been graded C or better under the traditional grading system.
3. The P grade is disregarded in the computation of the PCC grade point average.
4. This grade is available only when a student has selected the pass/no pass grade system option during the first 80% of a course’s term.

**NP NO PASS**
1. Unacceptable performance.
2. A grade of NP represents unsatisfactory achievement which would have been graded D or lower under the traditional grading system.
3. The NP grade is disregarded in the computation of the grade point average.
4. Faculty must record the last date attended for students that earn an NP.
5. This grade is available only when a student has selected the pass/no pass grade system option during the first 80% of a course’s term.

**MARK DEFINITIONS**

**SC SATISFACTORY COMPLETION**
The mark used when a student satisfactorily completes continuing education units (CEUs).

**NSC NOT SATISFACTORY COMPLETION**
The mark used when a Student does not satisfactorily complete continuing education units (CEUs).

**I INCOMPLETE**
1. At the time final course grades are recorded, the instructor may, with the consent of the student, record an “I” mark and grant additional time for the completion of a minor but essential requirement for the student who is otherwise making satisfactory progress.
2. This shall only be done by signed written agreement with a requesting student and a copy shall be left on file with the division administrative staff.
3. Such written agreements shall describe the missing requirement, the basis for the requirement’s evaluation, the affect on the final grade computation, and the completion date (within one year) for that requirement.
4. If no replacement grade for an “I” mark shall have been provided by the course Instructor within one calendar year, the “I” mark shall automatically be changed to and “F” or “NP” depending on the grade system option (chosen by the student) in affect at the time the “I” mark was originally recorded.
5. This mark does not entitle the student to repeat a course without paying tuition.
6. It may be impossible to receive this mark in some courses where, for example, equipment usage is required.

**W WITHDRAWAL**
1. This mark is to be used only by the Student Records Office when a Student has completed the official withdrawal process after the published drop deadline and before the published withdrawal deadline.
CIPR COURSE IN PROGRESS, RE-REGISTER
1. A mark used only for designated classes.
2. To receive credit, Students must re-register because equipment usage is required.
3. This may include courses in modular or self-paced programs.
4. This mark may also be used in a skills-based course to indicate that the Student has not attained the skills required to advance to the next level.
5. If the course is not completed within a year, the CIPR changes to an NS (No Show) 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 an F or NP (No Pass) on the transcript, based on the Student’s prior grading system option, 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. SACs may specify whether this mark is available for each course in its control.
5. Does not satisfy requirements for entry into courses where prerequisites are specified.

NS NO SHOW
1. This mark is assigned by faculty before the published drop deadlines to indicate that a student has never attended class. These students will be dropped by Registration.
2. If Faculty fail to assign an NS mark to Students who never attend class, and if those Students fail to drop or withdraw before the published deadlines, then they will earn a grade of F or NP according to the grading system option selected by the student at the time of registration.

R REPEATED
1. This mark may be used only by Registration. See “Repeated Courses.”

TRANSCRIPT MISCELLANY

REPEATED COURSES
1. All grades earned will appear on the transcript.
2. The most recent grade earned for a course will be calculated into the GPA and the total credits earned; all other grades earned for that course will be excluded from the GPA and the credits earned. If a course can be taken more than once for credit, the oldest grade for that course will be excluded only when the repeat limit is exceeded.

COMPUTING GRADE POINT AVERAGES
1. Grade points are computed on the basis of four points for each credit of A, three points for each credit of B, two points for each credit of C, one point for each credit of D, and zero points for each credit of F.
2. Grades of P and NP and marks of SC, NSC, I, W, X (no longer available for use), CIP, CIPR, R, NS, and AUD are disregarded in the computation of the grade point average.
3. The grade point average is the quotient of the total points divided by the total credits in which A, B, C, D, and F are received.

GRADE CHANGES
1. All grade change requests must be submitted by the Instructor within one year of the end of the course, including grade changes made as a result of resolving a disputed grade.
2. If a grade dispute cannot be resolved with the Instructor, the Student may follow the student grievance or complaint process.
3. If the Instructor is no longer employed by PCC and, following a good faith effort to contact the Instructor, the Instructor is not available for consultation, grade changes can be made by the appropriate Division Dean providing there is sufficient evidence to make the change.

WITHDRAWAL
1. Prior to the published drop deadlines, Student shall be able to drop any registered class by completing the official drop/withdrawal process.
2. Such action by the Student shall result in no charges for the course or courses (or reimbursement if charges have already been paid); the course or courses shall be removed from their transcript.
3. Students shall be able to withdraw from any registered class by completing the official drop/withdrawal process before the published withdrawal deadline.
4. This action shall result in a grade of W appearing for the course or courses on the transcript.
5. Students must withdraw before the published withdrawal deadline or a grade will be assigned by the instructor.

HONOR RECOGNITION

HONOR ROLL
Portland Community College shall recognize academic excellence based on Grade Point Average (GPA). Honors shall be awarded at the end of each term and upon completion of a degree or certificate.

Term Honors are awarded at the end of each term. To be eligible, a student must have earned at least six credits graded A - F in the term. The following Term Honors shall be awarded:

- Honor's List: 3.25 - 3.49 GPA
- Dean's List: 3.50 - 3.74 GPA
- President's List: 3.75 - 4.00 GPA

Highest Honors are awarded upon completion of a degree or certificate to each student who has earned a cumulative GPA of 3.75 or higher. All transcripted degrees and certificates are eligible for Highest Honors.

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/
NON-TRADITIONAL CREDIT

A student must have an established PCC transcript before any non-traditional credit can be recorded. Non-traditional credit may not be used to establish the residency requirement. Students must submit a Non-Traditional Credit form to the Student Records Office and pay the non-refundable fee. The Non-Traditional Credit form can be found at www.pcc.edu/transfercredit. After evaluation the non-traditional credit will be recorded on the student’s transcript. A maximum of 45 credits may be recorded through this process.

PCC will evaluate the following for non-traditional credit: Advanced Placement (AP), International Baccalaureate (IB), College Level Entrance Examination Program (CLEP), Military Service Credit and coursework at non-regionally accredited institutions and training sites. Non-traditional credit may be used to satisfy degree or certificate requirements. However, only AP, IB, and CLEP credit may be used to satisfy General Education requirements.

ADVANCED PLACEMENT (AP)

Students who complete Advanced Placement (AP) Exams may be eligible to receive college credit based on the exam score. Students must have official AP scores sent to Student Records, along with the Non-Traditional Credit form. A list of AP exams accepted by PCC and credit received is available on the Student Records website: www.pcc.edu/resources/student-records/advanced-placement.html

To request a copy of AP exam scores to be sent to PCC, contact the Advanced Placement Program. This information can be found at the address listed below or the following website: https://apstudent.collegeboard.org

Advanced Placement Program
PO Box 6671
Princeton, NJ 08541-6671
1-877-274-6474

INTERNATIONAL BACCALAUREATE (IB)

Students who complete International Baccalaureate (IB) Exams may be eligible to receive college credit based on the exam score. Students must have an official IB transcript of scores sent to Student Records, along with the Non-Traditional Credit form. A list of IB exams accepted by PCC and credit received is available at www.pcc.edu/resources/student-records/ib.html.

Students may request official IB transcripts by contacting:

IB Americas Global Centre
Attn: Transcript Officer
7501 Wisconsin Avenue, Suite 200 West
Bethesda, MD 20814
USA
email: ibid@ibo.org
phone: 301-202-3025

For more information on ordering transcripts please see the International Baccalaureate website: http://www.ibo.org/informationfor/alumni/transcripts/.

COLLEGE LEVEL ENTRANCE EXAMINATION PROGRAM (CLEP)

Students who completed College Level Entrance Examination Program (CLEP) Exams may be eligible to receive college credit based on the exam score. Students must have official CLEP scores sent to Student Records, along with the Non-Traditional Credit form. PCC accepts CLEP scores for some, but not all, subject areas. A list of exams accepted by PCC and credit received is available on the PCC Student Records website: http://www.pcc.edu/resources/student-records/clep.html

Information on how and where CLEP exams may be taken and how to request an official score report be sent to PCC can be found at the address listed below or the following website: clep.collegeboard.org/about/score.

CLEP – Transcript Services
PO Box 6600
Princeton, NJ 08541-6600
1-800-257-9558

MILITARY SERVICE CREDIT

Portland Community College awards college credit for military training and coursework based on ACE (American Council on Education) credit recommendations included in military transcripts. This is done at the discretion of PCC career-technical faculty department chairs and transfer credit evaluators. Transcripts from Community College of the Air Force and the Defense Language Institute, which are regionally-accredited institutions, are processed as standard transfer credit. Utilize the College Credit for Military Training Request Form that can be found on the student records and veterans services website: www.pcc.edu/resources/student-records/documents/military-credit-request.pdf.

MILITARY SERVICE PHYSICAL EDUCATION CREDIT

Students who do not submit a transcript for evaluation may earn three credits of physical education credit upon the submission of a DD 214 along with the military credit request form.

COURSE WORK AT NON-REGIONALLY ACCREDITED INSTITUTIONS AND TRAINING SITES

Non-traditional credit may be granted for course work completed at training sites or non-regionally accredited institutions. Examples include hospitals, banks, corporations, business schools, nationally accredited colleges and universities, etc.

Students must furnish detailed training records, course outlines and, whenever possible, transcripts. Individual departments will evaluate and assign PCC equivalencies. A maximum of 45 credits may be recorded through this process. Only those subject areas taught by PCC will be considered. Contact the Student Records Office for details. Course work evaluated from training sites and non-regionally accredited institutions is not generally acceptable in meeting General Education requirements.

STANDARDS FOR SATISFACTORY ACADEMIC PROGRESS

Portland Community College is open to any citizen of the PCC district who can benefit from the instruction offered. Students who are not making satisfactory progress will be provided with counseling, academic advising, and instruction. These services will be aimed at maximizing opportunities for students to benefit from their learning experience at PCC. The Academic Standards of Satisfactory Academic Progress Policy pertains to currently enrolled degree seeking students who have declared a major.

Any individual may be denied admission or continued admission if the appropriate college procedure indicates that the individual cannot benefit from the instruction desired. The procedure may be based on, but is not limited to, an evaluation of educational experiences, work history or appropriate testing.
ACADEMIC REGULATIONS

ACADEMIC STANDARDS AND SATISFACTORY ACADEMIC PROGRESS

LEVELS OF ACADEMIC STANDING

Good Standing

Students are expected to meet this minimum level of academic progress.

1. Maintain a cumulative Grade Point Average (GPA) of 2.0 or higher
2. Successfully complete 2/3 (66.67%) of attempted credits each term

Academic Warning

This is the level occurring the term after you do not meet standards.

• You will receive an email notifying you of your Academic Warning status.
• Read this email carefully and follow directions to access resources.

Good Standing can be regained the following term if standards are met.

Academic Probation

This level is reached after a term on Academic Warning if you fail again to meet the standards.

• A hold will be placed on your account preventing you from registering for the next term.
• You will receive an email notifying you of your Academic Probation status.
• You will be instructed to work with your academic advisor or counselor to develop a Learning Contract.
• You must work with your instructors to obtain a mid-term progress report that will be shared with your advisor or counselor.

Good Standing can be regained the following term if standards are met.

Academic Suspension

Academic Suspension occurs if you fail to meet standards for a third term in a row.

• If you have already enrolled for classes for the next term, you will be automatically dropped.
• You will receive an email and written letter notifying you of your Academic Suspension status.
• You will be suspended from PCC for one term.
• If you wish to return to PCC you must:
  • Complete the Re-Entry Process, or
  • Appeal for Exception due to extenuating circumstances.

For details about implications of not meeting satisfactory academic progress, appeals for exception and the re-entry process, please visit www.pcc.edu/resources/student-records/academic-progress/academic-standards.html.

TRANSFER CREDIT STANDARDS

Credits from other institutions may be accepted toward degree requirements if they were completed at a regionally accredited college or university.

For degree-seeking students the college evaluates coursework for all Lower Division Collegiate (LDC) classes from regionally accredited institutions where grades of A, B, C, or P/S (Pass/Satisfactory) were earned. P/S grades are only transferable if the transferring institution awarded that grade for C or higher. If a D was considered P/S, it is not transferable. If you are unsure what constitutes LDC coursework, see the Course Prefix List (p. 33). Career Technical Education coursework may be applied to a degree or certificate upon the evaluation and approval of the department chair. Early in their program, students should consult with the department chair of the appropriate program for assistance. PCC may accept up to 16 credits of 300-400 level transfer coursework, provided it is equivalent to courses offered at PCC. Upper-division transfer coursework is evaluated at the request of the student or by Graduation staff if needed to satisfy graduation requirements. Only subject areas taught at PCC will be evaluated. Transfer GPA is not included in the overall GPA on PCC transcripts.

For non-degree seeking students the college evaluates coursework in order to satisfy PCC’s Standard Prerequisites, as well as commonly used preparatory coursework in other subject areas (e.g. Biology).

To request evaluation of your transfer credits, complete and submit the transfer credit evaluation request which can be found on MyPCC. You must be a current credit PCC student to request a transfer credit evaluation. Submit this request after you have requested official transcripts from all schools where you have transfer coursework. Transfer evaluations are performed in the order in which they are received.

All transcripts received by the Student Records Office become the property of PCC. The Student Records Office will not provide copies of transcripts from other institutions. The Student Records Office is responsible for determining acceptance of transfer work to meet college requirements. Students should plan to meet with a department chair or advisor to review program requirements.

In order to receive credit toward a Portland Community College certificate or degree, it is the responsibility of each student with transcripts (credits) from international schools to have them translated (if necessary) and evaluated course by course by a service that is a member of the National Association of Credential Evaluation Services. Further information can be found at: http://www.naces.org by clicking on “Current Members” for a listing of service providers.

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

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

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.

ACADEMIC INTEGRITY POLICY

INTRODUCTION

Students of Portland Community College are expected to behave as responsible members of the college community and to be honest and ethical in their academic work. PCC strives to provide students with the knowledge, skills, judgment, and wisdom they need to function in society as educated adults. To falsify or fabricate the results of one’s research; to present the words, ideas, data, or work of another as one’s own; or to cheat on an examination corrupts the essential process of higher education.

GUIDELINES FOR ACADEMIC INTEGRITY

Students assume full responsibility for the content and integrity of the coursework they submit. The following are guidelines to assist students in observing academic integrity:

- Students must do their own work and submit only their own work on examinations, reports, and projects, unless otherwise permitted by the instructor. Students are encouraged to contact their instructor about appropriate citation guidelines.
- Students may benefit from working in groups. They may collaborate or cooperate with other students on graded assignments or examinations as directed by the instructor.
- Students must follow all written and/or verbal instructions given by instructors or designated college representatives prior to taking examinations, placement assessments, tests, quizzes, and evaluations.
- Students are responsible for adhering to course requirements as specified by the instructor in the course syllabus.

FORMS OF ACADEMIC DISHONESTY

Actions constituting violations of academic integrity include, but are not limited to, the following:

- Plagiarism: the use of another’s words, ideas, data, or product without appropriate acknowledgment, such as copying another’s work; presenting someone else’s opinions and theories as one’s own; or working jointly on a project and then submitting it as one’s own.
- Cheating: the use or attempted use of unauthorized materials, information, or study aids; or an act of deceit by which a student attempts to misrepresent academic skills or knowledge; unauthorized copying or collaboration.
- Fabrication: intentional misrepresentation or invention of any information, such as falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
- Collusion: assisting another to commit an act of academic dishonesty, such as paying or bribing someone to acquire a test or assignment, taking a test or doing an assignment for someone else, or allowing someone to do these things for one’s own benefit.
- Academic Misconduct: the intentional violation of college policies, such as tampering with grades, misrepresenting one’s identity, or taking part in obtaining or distributing any part of a test or any information about the test.

Penalties for Academic Dishonesty

If a student is found guilty of violating academic integrity, any one or a combination of the following penalties may be imposed by the faculty member:

- Verbal or written warning
- A grade of “F” or “NP” for the assignment, project, or examination

The following penalty may be imposed by the faculty member only after a hearing conducted by the division dean:

- A grade of “F” or “NP” for the course, overriding a student withdrawal from the course.

The Dean of Student Development may also issue the following disciplinary sanctions, in accordance with the Code of Student Conduct:

- Disciplinary admonition and warning.
- Disciplinary probation with or without the loss of privileges for a definite period of time. The violation of the terms of the disciplinary probation or the breaking of any college rule during the probation period may be grounds for suspension or expulsion from the college.
- Suspension from Portland Community College for a definite period of time. (i.e., suspension of the privilege to attend Portland Community College).
- Expulsion from Portland Community College (i.e., removal of the privilege to attend Portland Community College).

ACADEMIC DISHONESTY COMPLAINT AND HEARING PROCEDURES

1. The faculty member observing or investigating the apparent act of academic dishonesty documents the commission of the act, usually by writing down the time, date, place, and a description of the act.
2. The faculty member collects evidence, often by photocopying the plagiarized assignment and creating a paper trail of all that occurs after the alleged act of academic dishonesty. Often the evidence will include various samples of the student’s work showing a radical disparity in style or ability.
3. The faculty member provides the student an opportunity to explain the incident.
4. The faculty member explains to the student the procedures and penalties for academic dishonesty and gives the student a copy of the Portland Community College Academic Integrity Policy.
5. The faculty member may resolve the matter informally by determining an appropriate course of action, which may include a verbal or written warning, or a grade of “F” or “NP” on an assignment, project, or examination, or no further action. If the accused student contests the faculty member’s decision, a hearing with the division dean may be requested in writing 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/her side of the case. The student may bring an advisor, who may advise the student but not present the case. If the student misses the hearing, the faculty member and division dean may proceed with the process to completion. The division dean will consider any evidence submitted within seven days of the hearing, and interview persons as warranted. The division dean determines if the action recommended by the faculty member is appropriate.

8. Within 10 days of the hearing, the division dean sends written notification of the results to the student and faculty member.

9. Within 10 days of the notification, the student may submit a written appeal to the dean of instruction. The decision of the dean of instruction is final.

10. The division dean sends a final report to the dean of student development. The dean of student development may also issue the following disciplinary sanctions, in accordance with the Code of Student Conduct:
- Disciplinary admonition and warning.
- Disciplinary probation with or without the loss of privileges for a definite period of time. The violation of the terms of the disciplinary probation or the breaking of any college rule during the probation period may be grounds for suspension or expulsion from the college.
- Suspension from Portland Community College for a definite period of time. (i.e., suspension of the privilege to attend Portland Community College).
- Expulsion from Portland Community College (i.e., removal of the privilege to attend Portland Community College).

SOURCES

With permission, contents of this policy were adapted from “Academic Honesty” and “Academic Dishonesty,” Oregon State University, Corvallis, Oregon; and “Student Rights and Responsibilities: Scholastic Ethics Code,” Pima Community College, Tucson, Arizona.

CHILDREN ON PCC PROPERTIES

Children are welcome on Portland Community College campuses and properties in appropriate situations and while actively supervised by a parent, guardian, or responsible adult. This policy outlines the College’s approach to ensuring that reasonable steps are taken to protect the study and work environment of the College, and the health, safety, and liability issues associated with children on PCC properties.

SCOPE

This policy applies to minor children under the age of 16 who are not officially enrolled in classes or employed by the College. This policy does not apply to organized activities such as attending a registered child care facility, after school care activities, school field trips, and approved programs including, but not limited to, athletic events, theater productions, art programs, and other events targeted to children.

Students under the age of 16 who are officially enrolled, and for whom an authorized Underage Release form is on file with the Admissions Office, have the same rights, responsibilities and privileges of any other student in the classroom and on college properties.

APPLICATION

The College seeks to provide an environment which is conducive to study and work. Children must be actively supervised by their parent, guardian, or responsible adult at all times when they are on college properties.

College staff, faculty and administrators have the responsibility to direct the removal of a child in accordance with section 3.6 of this policy.

Due to safety and liability issues, except as otherwise defined in this policy, under no circumstances may unsupervised children be on college properties, including playing, roaming, and occupying campus grounds or buildings.

Any college employee who finds an unaccompanied child on college properties should inform Public Safety of the location of the child.

RESTRICTED AREAS

Children cannot be allowed in areas where their presence is disruptive or where health, safety, and liability risks are identified. Areas in which children are NOT permitted include:

- Testing centers
- Classrooms (when the Instructor determines that the presence of children would be unsuitable)
- Laboratories and laboratory preparation areas
- Scientific, technical and maintenance work spaces
- Fine or performing arts work spaces or studios
- Areas that contain hazardous chemicals, machinery or equipment
- Commercial kitchens and other food preparation areas
- Fitness centers

Other areas may be identified as unsuitable for children as a result of a risk assessment and supervisors of the respective areas are required to inform staff and students of requirements or restrictions.

PCC TRANSPORTATION SERVICES

When children are passengers in any PCC vehicle, including shuttle buses, the operators of these vehicles are not responsible for ensuring that child passengers meet child safety requirements. It is the responsibility of the care provider to ensure that any child accompanying them meet the child safety requirements. Where safety restraints are not available, the care provider will ensure the child is properly seated to minimize possible accident or injury. Failure to conform to these guidelines will result in child and care provider being denied transport (as applicable to ORS 811.210).

RESPONSIBILITY OF THE COLLEGE

- To provide an environment conducive to study and work for all students, staff and visitors.
- To provide a healthy and safe study and work environment for all students, staff and visitors and to comply with legislative requirements.
- To take reasonable steps to assist students, staff and visitors who may have special needs to enable access to facilities and services.

RESPONSIBILITIES OF PEOPLE BRINGING CHILDREN INTO THE COLLEGE

- To take reasonable steps to safeguard the health and safety of the children in their care while on college properties.
- To consider the potential risk to the health and safety of others that may come with bringing children into the College environment and to take reasonable steps to safeguard against those risks.
- To be responsible for the behavior of the children in their care, so as not to disrupt, inconvenience or endanger staff, students or other visitors.

RESPONSIBILITIES OF PCC STAFF AND INSTRUCTORS

To direct removal of a child in accordance with this policy if:
The child’s health or safety is at risk;
The child is presenting a health, safety or liability risk to property or others;
The child’s behavior is causing undue disruption to the work of students or staff; or
The presence of a child is unsuitable.

Instructors are responsible to direct the removal of children from their classroom. In the case of public areas, any member of staff on duty has the authority to direct that children be removed from the area.

Students who wish to appeal a specific situation, or who fail to comply, may follow the Code of Student Conduct hearing process as outlined in the PCC Student Rights and Responsibilities Handbook.

CODE OF STUDENT CONDUCT

PURPOSE
The purpose of the Policy on Student Conduct is to communicate the expectations that Portland Community College ("PCC") has of students, and to educate and guide students to understand their responsibility for appropriate behavior and respect for others in the PCC community. PCC is dedicated to the advancement of learning, to student retention and success, and also to the development of responsible personal and social conduct. The maintenance of discipline in the PCC setting is intended to support a civil environment conducive to learning and inquiry. Student Services staff members work in partnership with instructors and academic administrators to support this goal.

AUTHORITY
This policy sets forth the appropriate discipline of any student who acts to impair, interfere with, or obstruct the orderly conduct, processes, and functions of PCC or otherwise engages in conduct that PCC has determined is unacceptable for a student at PCC. PCC reserves the right to impose discipline based on student conduct that has some connection to the student’s relationship with PCC and that PCC determines adversely affects the PCC community in a substantial manner.

The campus Dean of Student Development or designee(s) shall administer the Policy on Student Conduct by developing and implementing procedures as deemed appropriate.

PCC reserves the right to take appropriate action to protect the safety and well-being of the campus community. The Campus President or designee, when faced with a situation that he or she determines is likely to or does substantially disrupt the order of PCC, threatens the health and welfare of the PCC community, or interferes with PCC operations has the authority to prohibit any person or persons from entering or remaining on PCC property. PCC may exclude the student from campus and engage PCC public safety and local law enforcement assistance in enforcing the exclusion.

Persons who are not students are also expected to comply with PCC policies and procedures, when engaging in any activity connected with PCC.

SCOPE
This policy applies to students at PCC. The term "student" includes all persons taking courses at the college, both full-time and part-time, pursuing credit or non-credit classes or enrolled in any special program approved by the college. Persons who are not officially enrolled for a particular term, but who have a continuing relationship with the college, are considered "students."

The purpose of publishing PCC’s policy on student conduct is to give students general notice of prohibited behavior. This policy is not written with the specificity of a criminal statute. Any question of interpretation regarding the policy will be referred to the Dean of Student Development or a designee for final determination.

VIOLATIONS OF LOCAL, STATE, AND FEDERAL LAW

A student may be accountable both to governmental authorities and to PCC for acts that constitute violations of law and this policy. Student conduct that may constitute a crime may be referred to appropriate law enforcement agencies for prosecution. Disciplinary proceedings at PCC will not be subject to challenge on the grounds that criminal charges involving the same incident have been filed, prosecuted, dismissed, reduced, or otherwise resolved or that such proceedings constitute double jeopardy.

STUDENT RESPONSIBILITY
Admission to and participation in PCC as a student carries with it the presumption that the student will conduct him or herself as a responsible member of the PCC community. Thus, students are obligated to observe all PCC standards of conduct.

ADDITIONAL CONDUCT PROCEDURES
Programs based on contracts with government agencies or external funding sources may adopt additional conduct procedures consistent with this policy.

GROUNDS FOR DISCIPLINARY ACTION
PCC may impose discipline for violation of, or an attempt to violate, any PCC policies or campus regulations. Violations or attempted violations include, but are not limited to, the types of misconduct described in "Violations" section below.

Conduct may violate this policy but also may violate academic standards and an academic department or program may impose academic related-sanctions separate from, and in addition to, sanctions under this policy.

VIOLATIONS

1. Disruptive behavior: Examples include, but are not limited to:
   - Any behavior that is disorderly or substantially disruptive to the educational or administrative processes of PCC as determined by a PCC official.
   - Conduct that substantially interferes with PCC’s educational responsibility of ensuring the opportunity for all members of PCC community to attain their educational objectives, or PCC’s subsidiary responsibilities, which may include, but are not limited to: recordkeeping, providing miscellaneous services, and sponsoring out-of-class activities, such as lectures, concerts, athletic events, and social functions.
   - Obscene or lewd conduct.

2. Failure to comply with policies, laws, rules, or directives. This includes failure to comply with local, state, or federal laws and regulations, PCC policies, rules, or procedures, the lawful directives of PCC personnel acting in performance of their duties, and instructors’ directions. Examples include, but are not limited to: Possession, consumption, being under the influence, or furnishing of alcoholic beverages, other than at specific events sanctioned by PCC. See: http://www.pcc.edu/about/public-safety/policies.html.
   - Unlawful possession or use of illegal drugs or narcotics. See: http://www.pcc.edu/about/public-safety/policies.html.
   - Engaging in any activity involving unlawful use or possession of firearms or illegal weapons. See: http://www.pcc.edu/about/public-safety/policies.html.
   - Failure to comply with PCC policies, such as:
     - Academic Integrity Policy (Students should be aware that there may be separate academic consequences for failure to comply with academic integrity standards.) See: http://www.pcc.edu/resources/academic/standards-practices/academic-integrity.html.

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• Service Animal Policy and Procedures. See: http://www.pcc.edu/resources/disability/policies/service-animals.htmlPCC Copyright Compliance Statement. See: http://www.pcc.edu/about/policy/copyright/compliance.html

• PCC Nondiscrimination & Non-harassment Policy. See: http://www.pcc.edu/about/affirmative-action/nonharassment.html

3. Assaulting, endangering, harassing, or threatening others. Examples include, but are not limited to:
• Assault, abuse, harassment, intimidation, or threats by any means toward a student, staff member, vendor, visitor, or guest of PCC.
• Stalking behavior or engaging in other forms of unwanted conduct directed at another person that:
  • threatens or endangers the safety, physical or mental health, or life or property of that person;
  • creates a reasonable fear of such a threat or action; or
  • interferes with the person's ability to participate in the educational or operational aspects of PCC.
• Sexual misconduct or abuse. See: http://www.pcc.edu/about/public-safety/policies.html

4. Unauthorized use or access. Examples include, but are not limited to:
• Unauthorized entry to PCC offices or property.
• Unauthorized possession or use of PCC equipment or resources.
• Unauthorized use of College PCC services.

5. Forgery, furnishing false information, identity theft, or dishonest conduct
• Examples include, but are not limited to:
  • Furnishing false information to PCC with the intent to deceive PCC or any person or agency.
  • Forgery, alteration, or misuse of PCC documents, records, or identification cards whether in written or electronic form.
  • Unauthorized use of another individual's identification or password, or sharing one's personal identification or password with an unauthorized user.
  • Knowingly reporting a false emergency.
  • Knowingly making false accusation of misconduct.

6. Theft or damage to property. Examples include, but are not limited to:
• Attempted or actual theft (as defined by Oregon law).
• Damaging, defacing, or destroying PCC or personal property.
• Conversion of PCC or personal property (e.g., receiving stolen books from the bookstore or from another student, and then attempting to sell them back to the bookstore and collect the money).

REMOVAL OF STUDENTS FROM CLASS
Instructors may ask persons who are not registered for their classes to leave the classroom. Exceptions may be made by PCC administrators and instructors for the purposes of providing approved accommodations or for allowing occasional guests.

An instructor may temporarily remove a student from class, or temporarily block a student's access to the learning management system for an online course, if the student has engaged in disruptive behavior. Before allowing the student to return to class, the instructor, department chair, and/or division dean may clarify with the student the behavioral standards that must be met in order to continue in the class. This clarification will occur as expeditiously as possible (preferably before the next class session or equivalent). The Dean of Student Development Office can serve as a resource in managing classroom behavior.

Examples of disruptive behavior in class include, but are not limited to:
• Unreasonable interruption of the learning process or environment.
• Failure to follow behavioral or conduct guidelines in the syllabus or directions of the instructor.
• Intimidation of others.

If the problem is not resolved through this clarification process, the student may be referred for disciplinary action to the Dean of Student Development. Permanent removal from a class may be imposed only by the Dean of Student Development or designee, in accordance with the Policy on Student Conduct Disciplinary Procedures.

In consultation with the instructor, the Dean of Student Development or designee and/or the Public Safety Office may take appropriate action to protect the safety and well being of the campus community. This may include prohibiting a student from returning to class or remaining on campus if it is determined that the student's behavior is likely to or does threaten the health and welfare of others. See “AUTHORITY” section above.

INVOLUNTARY LEAVE
PCC may require a student to take a leave of absence when the campus Dean of Student Development or designee determines that the student's conduct does one of the following:
• Suggests that the student might create a significant risk to the health and safety of others.
• Suggests a risk that PCC's educational and other activities may be substantially disrupted.

The “Procedures for Involuntary Leave of Absence for Health and Safety Reasons” are independent and separate from the Policy on Student Conduct, and do not preclude PCC from taking appropriate disciplinary action under that policy.

STUDENT CONDUCT DISCIPLINARY PROCEDURES
Reporting
Any PCC student, faculty member, or staff member may report a student suspected of violating the Policy on Student Conduct to the campus Dean of Student Development or designee. Typically, a written complaint or Student of Concern Reporting Form should be submitted promptly after the occurrence or discovery of the alleged infraction(s). The campus Dean of Student Development may, however, initiate disciplinary processes without a written complaint.

Student of Concern Reporting Form may be found at: http://www.pcc.edu/resources/counseling/students-in-distress/

Upon receipt of a written complaint, or information prompting the initiation of the disciplinary process, the campus Dean of Student Development or designee will evaluate whether the circumstances merit disciplinary action based on the nature of the charges.

Generally, the student charged with the violation will be informed of the nature and source of the complaint. The source of information may be kept confidential, if the Dean of Student Development or designee determines, in his or her discretion, 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.

PCC faculty, staff or students may also submit a Student of Concern Reporting form if there is a concern about a student’s behavior that may not be a conduct violation. Information on how to address and report students experiencing distress or demonstrating concerning behavior may be found at: http://www.pcc.edu/resources/counseling/students-in-distress/

Disciplinary Process
During the investigation of cases that may lead to disciplinary action, the status of the student will usually not be altered. The student will continue to be allowed to attend classes and be present on campus during the investigation. The Dean of Student Development or designee may make exceptions, however, and exclude a student from classes or PCC property if he or she determines that the student’s presence on campus is likely to interfere with PCC’s orderly operation or create a significant risk to the health and safety of students, faculty, staff, or PCC property.

Both PCC and the student may seek legal advice at their own expense, however because this is not a legal proceeding neither PCC nor the student will be represented or advised by a lawyer during any disciplinary meeting or hearing involving PCC and the student.

The student may withdraw from PCC of his or her own volition at any time during the disciplinary process. Disciplinary sanctions may still be imposed, however, if the student withdraws from PCC before the disciplinary process, or elects not to participate in disciplinary proceedings.

The student has the right to appeal any disciplinary action to the Campus President or designee, but may do so solely on the basis of alleged procedural violation(s) of the Disciplinary Procedures. If a violation of the Disciplinary Procedures is found to have occurred, the Campus President or designee will remand the case to the Dean of Student Development or designee for reprocessing.

Informal Resolution
The Dean of Student Development or designee, or any PCC official carrying out his or her duties, may address alleged or potential violations and initiate informal resolution in which the student and PCC agree on an outcome and the student is not formally disciplined but agrees to take steps to address the concerns that arose and led to possible discipline.

Formal Resolution
In cases that are not resolved informally, the Dean of Student Development or designee shall use the steps described below:

Step 1: At an initial conference with the Dean of Student Development or designee, the student will be notified in person or in writing about alleged violations and possible sanctions. The student will also be notified in person or in writing of the nature and source of the information underlying the alleged violations unless the Dean of Student Development or designee determines, in his or her discretion, 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. The student will have an opportunity to respond to the allegations and the information presented. The student may have a support person of his or her choice present. The support person is not permitted to present the case but may advise the student.

Step 2: If the student wishes to submit facts and information on his or her behalf, it must be submitted within seven calendar days of (and including) the initial conference.

Step 3: After considering the information in the case and interviewing persons as appropriate, the Dean of Student Development or designee may take one of the following actions:

1. Terminate the proceedings, exonerating the student.
2. Dismiss the case after appropriate guidance and advice.
3. Impose appropriate sanction(s) as described below.

Step 4: The student will be notified in writing of the decision of the Dean of Student Development or designee. The parents or guardian of any student under 16 years of age who receives sanction(s) under the Policy on Student Conduct will be notified.

Sanctions
The Dean of Student Development or designee may impose the following sanctions for violation of the Code of Student Conduct:

1. Disciplinary warning
2. 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 PCC rule during the probation period may be grounds for suspension or expulsion from PCC.
3. Restitution for damages.
4. A specified period of PCC and/or community service.
5. Removal from class(es) for which the student is currently registered.
6. Disciplinary suspension from PCC for a definite period of time and/or pending the satisfaction of conditions for readmission, (i.e., suspension of the privilege to attend PCC).
7. Expulsion from PCC (i.e., permanent removal of the privilege to attend PCC).
8. Any other sanction deemed appropriate.

Appeal
If the student wishes to appeal the decision on the basis of alleged violation of these procedures, he or she may do so by submitting a written appeal to the Campus President or designee within 14 calendar days after the notice is delivered to the address on record for the student in the College Registrar’s Office. The Campus President or designee shall render a decision regarding the alleged violation of due process within 14 calendar days of its submission.

Readmission After Disciplinary Suspension
A student suspended from PCC for disciplinary reasons may be readmitted only upon written petition to the campus Dean of Student Development or designee. The petition must, if applicable, indicate how specific reinstatement conditions, if any, have been met, and reasons that support reconsideration. The Dean of Student Development or designee shall convey his or her decision in writing to the student and, in the case of non-readmission, shall set forth the reasons in writing. The decision of the Dean of Student Development or designee is final.

Records
The Dean of Student Development or designee(s) is responsible for maintaining records and documentation of disciplinary cases in accordance with the state archival policies.

Information from disciplinary files is not 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 in which PCC has determined that it has a legitimate educational interest in the information, or in the case of other disclosures that comply with the Family Educational Rights and Privacy Act (FERPA), Board Policy, and local, state, and federal laws pertaining to education records.

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
Copyright infringement is the act of exercising, without permission or legal authority, one or more of the exclusive rights granted to the copyright owner under section 106 of the Copyright Act (Title 17 of the United States Code). These rights include the right to reproduce or distribute a copyrighted work. In the file-sharing context, downloading or uploading substantial parts of a copyrighted work without authority constitutes an infringement. Penalties for copyright infringement include civil and criminal penalties. In general, anyone found liable for civil copyright infringement may be ordered to pay either actual damages or “statutory” damages affixed at not less than $750 and not more than $30,000 per work infringed. For “willful” infringement, a court may award up to $150,000 per work infringed. A court can, in its discretion, also assess costs and attorneys’ fees. For details, see Title 17, United States Code, Sections 504, 505. Willful copyright infringement can also result in criminal penalties, including imprisonment of up to five years and fines of up to $250,000 per offense. For more information, please see the website of the U.S. Copyright Office at www.copyright.gov

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 which apply to student records. The Family Educational Rights and Privacy Act of 1974 (Statute: 20 U.S.C. 1232g; Regulations: 34CRF Part 99), also known as FERPA or the Buckley amendment, is a federal law that states (a) 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 and 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

Copyright Law (PL94-553) for such purposes as criticism, comment, news reporting, teaching, scholarship, or research and reproduction of copyrighted materials (including multiple copies for classroom or library use). Rev. 09-19-2010, Adopted by the PCC Copyright Committee May, 2010

Summary of Civil and Criminal Penalties for Violation of Federal Copyright Laws

Copyright Office at www.copyright.gov

Portland Community College supports compliance with copyright law for the protection of the institution and of employees as both creators and users of copyright protected works.

The College requires PCC faculty, staff and students to observe federal law regarding the use of copyright protected materials. See: Copyright Law of the United States of America.

PCC retains limited liability for copyright infringement found on its domain. PCC will remove or disable materials on its domain that are identified as violating copyright by the copyright owner or his/her agent. The College will make reasonable efforts to notify the faculty, staff and or student responsible.

To promote “the progress of science and the useful arts,” the college supports fair use for educational purposes as outlined in the federal Copyright Law (PL94-553) for such purposes as criticism, comment, news reporting, teaching, scholarship, or research and reproduction of copyrighted materials (including multiple copies for classroom or library use). Rev. 08-19-2010, Adopted by the PCC Copyright Committee May, 2010

Summary of Civil and Criminal Penalties for Violation of Federal Copyright Laws
The Grade Appeal Procedure only applies to disputes about posted final course grades. Concerns about grades given for assignments or examinations during the term, or concerns or complaints about instructional quality should be addressed through the Complaint Procedures, which may be found as a link at: http://www.pcc.edu/about/policy/student-rights/

The Grade Appeal Procedure does not invalidate the requirements mandated by any department, program, and/or the curriculum of any particular course. Specific course assignments, instructor-specific policies, or other formal course-related materials cannot be challenged or appealed through this process. This process applies only to assertions of improper final evaluation as described above.

AUTHORITY
The instructor and/or the appropriate academic Division Dean have the authority to authorize a change to a final course grade as an outcome of this appeal process.

The Dean of Student Development will serve as steward of the Grade Appeal Procedure. When the appeal process is concluded, all documentation will be forwarded to the campus Dean of Student Development, who will maintain such documentation in accordance with appropriate retention schedules.

STUDENT PROTECTIONS A student may have a support person of his/her choice (such as a PCC counselor or advisor, or student government representative) throughout the appeal process. The support person is not permitted to present the appeal, but may advise the student throughout the appeal process. The Dean of Student Development’s office can assist the student with identifying a support person, or arranging for assistance with language translation, if needed.

Both PCC and the student may seek legal advice at their own expense; however, neither PCC nor the student may be represented by a lawyer during any meeting pertaining to the Grade Appeal Procedure.

Concerns involving harassment or discrimination on the basis of race, color, religion, sex, sexual orientation, age, national origin, disability, veteran status, or other legally protected status should be directed to PCC’s Office for Affirmative Action and Equity (OAAE). Information may be found at http://www.pcc.edu/about/affirmative-action/Nonharassment.html. The OAAE and the academic division considering the grade appeal may engage in parallel investigations if the College determines parallel investigations are appropriate.

PROCEDURES

STEP 1: Attempt to Resolve the Final Grade Concern With the Instructor

A. If the student believes his or her grade was a mistake, he or she must first directly communicate with the instructor about the final grade by sending a written inquiry to the instructor requesting an explanation of how the grade was determined and stating his/her questions and concerns about the grade assigned. The communication should include specific reasons why the student believes he or she was graded improperly, and supporting evidence, such as statements in the course syllabus, alleged discrepancies in points or grades received, and emails to and from the instructor, etc. This written inquiry must be received by the instructor within 14 calendar days of the final course grades being posted, or the student forfeits the right to appeal the grade.

B. Upon receiving a written inquiry regarding a final course grade, the instructor is expected to respond to the student’s inquiry in writing within 14 calendar days of the documented date of the student’s inquiry. If the instructor is unable to respond within 14 days of the documented date of the student's inquiry, the Department Chair or Division Dean may initiate an appropriate response, if the inquiry is made known to them by the student. For instructor and department contact information see the Staff Directory on the PCC website at: http://www.pcc.edu/about/contact/advanced-search.html and the Department Chair Directory at: http://www.pcc.edu/about/administration/faculty-department-chairs.html. The campus Dean of Student Development offices can assist with Step 1.

C. If questions remain after the student receives explanation from the instructor, the student is encouraged to discuss those concerns in person with the instructor.

STEP 2: Submit a Grade Appeal Form to the Dean of Student Development

A. If the student’s concern is not resolved through Step 1, the student may submit a Grade Appeal Form, with supporting evidence, to the campus Dean of Student Development or designee within 30 calendar days of the student’s documented inquiry to the instructor in Step 1.

Grade Appeal Forms are available at the Dean of Student Development offices and online at: http://www.pcc.edu/about/policy/student-rights/grievance.pdf.

B. The Dean of Student Development or designee will review the Grade Appeal Form and determine the next steps, which may include,
Policies

but are not limited to: (1) referral of the appeal to the instructor’s academic Division Dean or other immediate supervisor for review, investigation, and response; (2) request for additional information and supporting documentation from the student, or (3) a decision not to proceed with the appeal if the academic evaluation being contested does not fall within the scope of this policy.

C. Once sufficient information and documentation has been received from the student, and the appeal has been deemed appropriate, the Division Dean or other immediate supervisor will investigate the final course grade in question, make a decision about the appropriateness of that grade under the standards described above, and communicate the decision in writing to the student. A copy of the written decision will also be sent to the Dean of Student Development.

Generally, Step 2 will be completed within 14 calendar days of receipt of the Grade Appeal Form, unless more time is needed to investigate.

STEP 3: Appeal Decision to Dean of Instruction

A. The student may appeal the decision in Step 2 only on the grounds that (1) the procedures outlined in this policy were not followed; or (2) relevant evidence concerning the final course grade becomes available that was not available during Step 2. An appeal must be made within 14 calendar days of receipt of the Division Dean’s written decision. The student must submit written justification for further review and provide evidence that there are grounds for the appeal to the Dean of Instruction.

B. The Dean of Instruction will objectively investigate how the grade appeal process was conducted in Step 2, and/or consider relevant evidence that was not available or not considered during Step 2, make a final decision on the appeal, and communicate it in writing to the student; with a copy to the Dean of Student Development.

CAMPUS CONTACT INFORMATION:

Cascade: SSB 209
Tel. 971-722-5292
Email: dos.ca@pcc.edu

Rock Creek: Building 9, Rm. 115
Tel. 971-722-7215
Email: dos.rc@pcc.edu

Southeast Campus/ELC: MTH 149
Tel. 971-722-6152
Email: dos.se@pcc.edu

Sylvania: CC 247
Tel. 971-722-4529
Email: dos.sy@pcc.edu

Distance Learning: Students may contact any of the above campus offices

STUDENT RIGHTS AND RESPONSIBILITIES

The PCC Student Rights and Responsibilities supersede all previous student rights and responsibilities policies. This document is to be made available to all students, in the Portland Community College ("PCC") Catalog, on the PCC website at www.pcc.edu, and in printed form in the Offices of the Deans of Student Development.

This document is not a contract between a student and PCC, and PCC reserves the right to modify or revise the contents of this document at any time. This document is to be construed in a manner that is consistent with other PCC policies and regulations. The most current version is available online at: http://www.pcc.edu/about/policy/student-rights/.

The term "student" includes all persons taking courses at the college, both full-time and part-time, pursuing credit or non-credit classes or enrolled in any special program approved by the college. Persons who are not officially enrolled for a particular term, but who have a continuing relationship with the college, may be considered "students."

Admission to and participation in PCC carries with it the presumption that students will conduct themselves as responsible members of the PCC community. Thus, students as defined above are obligated to follow this policy.

STUDENT RIGHTS

RIGHT TO PROTECTION FROM IMPROPER ACADEMIC EVALUATION

Student academic performance will be evaluated on an academic basis (which may include attendance), and the ability to apply skills, and not on a student’s opinions or conduct in matters unrelated to academic standards. The course syllabus will contain and articulate the evaluation standards and grading criteria by which student performance is measured for that particular course.

Each student is responsible for meeting standards of academic performance established for each course in which the student is enrolled.

A student may dispute his or her academic evaluation under the Grade Appeal Procedure if the student believes that the evaluation standards and grading criteria contained in the course syllabus were not followed by the instructor or were imposed in an arbitrary or capricious manner. Any student who believes that he or she has been unfairly graded should refer to the PCC Grade Appeal Procedure at: http://www.pcc.edu/about/policy/student-rights/

Students have the right to take reasonable exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, while still being responsible for learning the content of any course of study in which they are enrolled.

For complaints about instruction, other than grade appeals, see Student Complaint Procedures link at: http://www.pcc.edu/about/policy/student-rights/

RIGHT TO FREEDOM FROM HARASSMENT AND DISCRIMINATION

PCC does not tolerate unlawful discrimination based on race, color, religion, age, sex, national origin, ethnic origin, sexual orientation, height/weight ratio, disability, veteran status, age, or sexual orientation in any area, activity, or operation of PCC. PCC complies with applicable federal, state, and local civil rights laws and regulations prohibiting discrimination. Equal opportunity for employment, admission, and participation in PCC’s benefits and services shall be extended to all persons, and PCC shall promote equal opportunity and treatment through application of this policy and other efforts of PCC designed for that purpose.

Any person who believes he or she has been discriminated against or harassed by a PCC employee, representative, or student is encouraged to file a complaint through the Office of Affirmative Action and Equity (Downtown Center, Room 300, 971-722-5840 or 971-722-5841) or online at: http://www.pcc.edu/about/affirmative-action/documents/complaint-form.pdf.

Further information on PCC harassment and discrimination policies may be found at: http://www.pcc.edu/about/affirmative-action/

Any person who believes that he or she has been discriminated against on the basis of disability under Section 504 of the Rehabilitation Act of 1973 or the Americans with Disabilities Act ("ADA"), including believing that he or she has not been provided with a reasonable accommodation or modification to which she or he is entitled, may discuss these concerns with a disability services counselor, coordinator, or specialist, or submit a complaint under the Nondiscrimination and Nonharassment Policy at: http://www.pcc.edu/about/affirmative-action/Nonharassment.html
Further information on resolving complaints by students with disabilities regarding appropriate accommodations or discriminatory treatment may be found at: http://www.pcc.edu/resources/disability/policies/resolving.html

RIGHT OF ACCESS TO, AND PROTECTION FROM, IMPROPER DISCLOSURE OF STUDENT RECORDS

PCC complies with all applicable state and federal laws, rules, and regulations that apply to student records. All information contained in PCC’s records that is personally identifiable to any student will be kept confidential and not released except upon prior written consent of the subject student or under any other exception for the release of student records without consent. Student information may be shared among PCC faculty and staff when PCC has determined that the college has a legitimate educational interest in the information.

Further information on PCC’s Privacy Policies may be found at: http://www.pcc.edu/about/policy/privacy.html

Concerns or complaints are to be directed to Student Records (971-722-7100 or records@pcc.edu).

Counseling Records

PCC counselors are prohibited by the standards of their profession from disclosing any information shared by a student during a counseling session, unless the student releases the information or other specific circumstances apply. These specific circumstances include harm to self or others, abuse of a minor, elder, or other vulnerable adult, health/medical emergency, or other circumstances required by Oregon law. Counselors will comply with all ethical and legal rules concerning confidentiality of counseling sessions.

Further information on confidentiality in counseling services may be found at: http://www.pcc.edu/resources/counseling/

RIGHTS CONCERNING PARTICIPATION IN CO-CURRICULAR ACTIVITIES

Students may be asked to participate in formulating and reviewing policies and rules, and to express their views, both publicly and privately, on these policies and rules, as well as matters of general interest to the student body.

Student Clubs and Organizing

Students have the right to form student clubs and organizations under the provisions of the Associated Students of Portland Community College (”ASAPCC”) constitution and campus bylaws, and the right to carry out fund-raising activities for these clubs. All fund-raising activities for ASAPCC and student clubs must be approved by the Campus Student Leadership Coordinator or designee.

Students and recognized student clubs and organizations have the right to have access to PCC facilities, subject to ordinary schedules, policies and regulations governing the use of each facility. Recognized student clubs and organizations have access to facilities at no cost unless additional services (custodial, Public Safety, table and chair set-up, etc.) are required. PCC procedures for reserving spaces in PCC’s buildings for meetings, speakers, or demonstrations must be followed.

As part of the educational process, recognized student clubs and organizations may invite to the campus any person who, in their opinion, might contribute to the intellectual or cultural life of PCC. Individual students wishing to invite a speaker to campus should seek the sponsorship of a recognized club or organization. Speakers may speak freely on the topic of their choosing, as long as they do not threaten to endanger the safety of any member(s) of the PCC community, pose a threat to PCC’s physical facilities, or substantially obstruct or disrupt PCC’s regular and essential operations.

To request room reservations, contact:
Cascade - carooms@pcc.edu
Rock Creek – rcrooms@pcc.edu
Southeast – serooms@pcc.edu
Sylvania – syrooms@pcc.edu

Orderly Demonstrations

Students have the right to conduct orderly demonstrations (including picketing, distribution of leaflets, and protests in peaceable assembly) unless the participants of those demonstrations threaten to endanger the safety of any member(s) of the PCC community, pose a threat to PCC’s physical facilities, or substantially obstruct or disrupt PCC’s regular and essential operations, in which case PCC reserves the right to close its facilities, clear its grounds, and cancel a demonstration. PCC recommends that those intending to conduct demonstrations outside of PCC buildings consult with the Dean of Student Development or designee to identify space that accommodates the reasonable needs of both PCC and those engaged in acts of speech or protest (e.g., large open spaces, with safe paths of ingress and egress, and with less likelihood of disrupting the educational environment).

Individuals and groups who wish to hold a demonstration within one of the College’s buildings must comply with campus policies and procedures for requesting space. Advance notice and approval is required for indoor demonstrations to allow the College to make appropriate and reasonable logistical arrangements for the demonstration.

To request room or space reservations within PCC buildings, contact:
Cascade - carooms@pcc.edu
Rock Creek – rcrooms@pcc.edu
Sylvania – syrooms@pcc.edu
Southeast Center – serooms@pcc.edu

Distribution of Material

Students have the right to distribute free publications not in violation of federal or state laws, and/or PCC policies and procedures, such as books, magazines, newspapers, handbills, leaflets, and similar materials. Distribution of these materials in classrooms, hallways, libraries, offices, or other PCC facilities used primarily for educational and instructional purposes must not interfere with the work or study of persons in those PCC facilities.

Any persons desiring to post or distribute publications must comply with campus policies and procedures. All handbills, leaflets, newspapers, posters, and similar materials must bear the name and address of the organization and/or individual distributing the materials.

Information on submitting items for posting may be found through Associated Students of PCC at: http://www.pcc.edu/resources/aspcc/

Concerns or complaints regarding Rights Concerning Participation in Co-Curricular Activities are to be directed to the Dean of Student Development for the campus or program. Complaints regarding the rights set forth in this section should be filed as soon as practically possible to enable PCC to investigate and attempt to resolve the issue. To file a complaint, contact:

Campus Contact Information:
Cascade: SSB 209
Tel. 971-722-5292
Email: dos.ca@pcc.edu

Rock Creek: Building 9, Rm. 115
Tel. 971-722-7215
Email: dos.rc@pcc.edu

Southeast Campus/ELC: MTH 149
Tel. 971-722-6152
Email: dos.se@pcc.edu

Sylvania: CC 247
Tel. 971-722-4529
Email: dos.sy@pcc.edu

Distance Learning: Students may contact any of the above campus offices
ABOUT PORTLAND COMMUNITY COLLEGE

Portland Community College is the largest institution of higher learning in Oregon, serving more than 1,440,000 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 nearly 90,000 full- and part-time students annually.

The PCC Board of Directors consists of seven members elected by zones to four-year terms. The board members govern the college, which includes selecting the president, approving the hiring of other staff and faculty, approving the college budget and establishing policies that govern the operation of the college.

ACCREDITATION

Portland Community College was accredited in 1970 by the Northwest Commission on Colleges and Universities, the accrediting agency for this region. Many programs within the college also have accreditation from professional associations. Documents describing Portland Community College’s accreditation and licensing are available for review in the college library or in the Office of the Vice President for Academic and Student Affairs. Information regarding accreditation from professional associations may be obtained by contacting the department chairperson of the individual program.

COLLEGE HISTORY

Portland Community College began as the adult education program of the Portland Public Schools. On May 15, 1961, the school district established the college as a separately operating entity. Because the college included students from many areas outside the Portland school district, in 1965 the school board appointed an advisory council to supervise the college and to give representation to areas beyond the school district boundaries.

As the advisory council and the school board developed programs and plans for the rapidly growing college, it became evident that the college needed to be a separate governmental unit with its own elected board to represent the areas from which students came. In 1968, voters of the five-county area approved the formation of a new college district named the “Metropolitan Area Education District.” It included the school districts of Portland, Sauvie Island and Riverdale in Multnomah County; Lake Oswego in Clackamas County; St. Helens, Scappoose and Vernonia school districts in Columbia County; Newberg school district in Yamhill County and all of Washington County.

At this time the voters also elected the first college board of directors and approved a tax base, providing the college with funds for the local share of operation and building construction. In 1971, the name of the district was changed to “Portland Community College District.”

District residents showed continuing support for their college in 1980, and again in 1986 as they voted to increase the PCC tax base. Enrollment growth of 25 percent since 1986 led voters to approve a $61.4 million bond measure in 1992 to expand facilities at all campuses, and repair and upgrade existing buildings. In 2000, voters approved another bond measure for $144 million. As a result of the bond measure, the college opened new buildings at all three comprehensive campuses in 2003 and 2004, and unveiled the new Southeast Center on SE 82nd and Division in 2004. PCC joined other community colleges and universities from around the country in signing a national climate initiative that launched the college’s climate action plan to reduce its carbon footprint. In 2008, area voters approved a $374 million bond measure—at that time, the largest ever in the state of Oregon—to improve technology, meet workforce demand needs and address rising enrollment. Willow Creek Center was the first building constructed as a result of this bond planning and work began all across the district in 2010-2011.

The Newberg Center began offering classes in its temporary space in fall 2011. Its permanent site opened in fall 2012, providing Yamhill County with a 12,000 square-foot education and community space. It is recognized as one of the most sustainable educational buildings in the nation, with solar panels, natural cooling and heating systems, and natural lighting. During the 2011-2012 school year, PCC celebrated its 50th year of serving local communities, with celebrations across the district, recognition of 50 distinguished alumni and 50,000 hours of community service work. In 2012, SolarCity built the state’s largest solar array on the Rock Creek Campus, which powers Building 9. In the summer of 2013, Jeremy Brown joined PCC as its sixth president.

MISSION STATEMENT

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

To fulfill its mission, the college focuses on these core themes:

- Access and diversity
- Student success
- Quality education
- Economic development and sustainability

PCC LOCATIONS

The college has three comprehensive campuses that provide lower-division college transfer courses, two-year associate degree programs and career/technical training programs. A fourth comprehensive campus will open in fall 2014 at the Southeast Center. Additionally, the Extended Learning program serves students district-wide at a variety of PCC locations. Included are 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. Campuses and centers are strategically located throughout the district to be within easy access of residents.

CASCADE CAMPUS

Campus President: Karin Edwards
705 N Killingsworth Street
Portland, OR 97217
www.pcc.edu/cascade

PCC’s Cascade Campus is located in the urban heart of the city of Portland and serves about 23,000 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: Sandra Fowler-Hill
17705 NW Springfield Road
Portland, OR 97229-1744
www.pcc.edu/rockcreek

While Rock Creek has a Portland address, it sits about 12 miles west of downtown in the rapidly growing Beaverton-Hillsboro area of Washington County. The 256-acre campus provides a beautiful setting for both college transfer and career/technical programs and annually serves nearly 26,000 students. The campus provides a model for partnerships with area high schools. A new Science and Technology building houses classroom and laboratory instruction.
SOUTHEAST CAMPUS
Campus President: Jessica Howard
2305 SE 82nd Avenue
Portland, OR 97216
www.pcc.edu/southeast

Thanks to the bond measure passed by voters in 2008, Southeast Campus has more than doubled its size from 94,000 to 200,000 square feet and expanded its class offerings, allowing students to complete an associate’s or transfer degree without traveling to another campus. A rich blend of culture is reflected in the community Southeast Campus serves, including a growing number of Vietnamese, Chinese, Korean, Latino, Russian and Ukrainian families. Despite the expansion, the campus maintains a small campus feel with close connections to local neighborhoods and businesses.

SYLVANIA CAMPUS
Campus President: Suzanne Johnson (interim)
12000 SW 49th Avenue
Portland, OR 97219-7132
www.pcc.edu/sylvania

Sylvania is located in suburban Southwest Portland between Lake Oswego, Tigard and downtown Portland. It is the largest campus, serving approximately 27,000 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.

CLIMB CENTER FOR ADVANCEMENT
1626 SE Water Avenue
Portland, OR 97214-3336
www.pcc.edu/climb

The CLIMB Center for Advancement, formerly known as the Central Portland Workforce Training Center, is a 31,000-square-foot facility near OMSI in the central east-side Portland. CLIMB, which stands for Continuous Learning for Individuals, Management and Business, offers continuing education and professional training for health professionals, small business owners, managers and work teams. The center provides access to a broad range of training areas and facilities that meet the latest in industry standards and technical capabilities.

WILLOW CREEK CENTER
241 SW Edgewater Drive
Beaverton, OR 97006
www.pcc.edu/willowcreek

The Willow Creek Center (near 185th and Baseline Road) in Washington County opened at the end of 2009 as part of the college’s 2008 bond measure and special funding from the state. Located on TriMet’s blue MAX line, the 100,000 square-foot educational center serves as a one-stop for the unemployed and under-employed, and houses programs from the old Washington County Workforce Training Center and partner agencies. Programming at the site includes GED classes, certified nursing assistant training, medical assisting and emergency medical services. Its cornerstone is the acclaimed Washington County Workforce Development. Established in 1995, it provides the training and employment services for unemployed workers.

PORTLAND METROPOLITAN WORKFORCE TRAINING CENTER
5600 NE 42nd Avenue
Portland, OR 97218
www.pcc.edu/metro

The Portland Metropolitan Workforce Training Center is located in urban northeast Portland and primarily houses Workforce Network, a department of professionals committed to finding solutions to optimize workforce performance. Workforce Network specializes in helping businesses meet human resources needs and job seekers with career development.

The programs of Workforce Network including Steps to Success, Dislocated Worker and Metro One Stop, provide a comprehensive array of employment and training. Instruction is available in Adult Basic Education, English for Speakers of Other Languages, job readiness preparation, job development, short-term training, internships, alcohol and drug/mental health assessment, and referral and computer education. The center also provides Gateway to College and Community Education classes.

HILLSBORO EDUCATION CENTER
775 SE Baseline Street
Hillsboro, OR 97123
www.pcc.edu/hillsboro

Located in downtown Hillsboro, the center houses four classrooms with state-of-the-art audio/visual equipment and a 30-station computer lab. Classes are offered mornings, afternoons, evenings and Saturdays. A variety of transfer courses are offered along with classes in computers and graphic design. Pre-college reading, writing and math are also offered. English for Speakers of Other Languages (ESOL) classes are scheduled year round. Academic advising and placement testing are available during normal business hours.

NEWBERG CENTER
135 Werth Boulevard
Newberg, OR 97132
www.pcc.edu/newberg

Open in 2012, Portland Community College’s Newberg Center was built with funds from the 2008 bond measure. The educational facility, ranked LEED Platinum for its sustainability features, is approximately 12,000 square feet and includes five classrooms, a conference room, administrative space and a reception area. A variety of credit and non-credit courses are offered, including Arts and Letters, Social Science, Math, Science, Developmental Reading, Writing, and Math, Computers, ESOL, and Business. The center partners with the Newberg School District to offer educational opportunities in Machine Manufacturing.

PCC CONTRACTED EDUCATIONAL SERVICE DISTRICTS

Oregon Coast Community College
400 SE College Way
Newport, OR 97366
541-265-2283

PCC CORE OUTCOMES

GRADUATES OF PORTLAND COMMUNITY COLLEGE SHOULD BE COMPETENT IN:

COMMUNICATION
Communicate effectively by determining the purpose, audience and context of communication, and respond to feedback to improve clarity, coherence and effectiveness in workplace, community and academic pursuits.

COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY
Apply scientific, cultural and political perspectives to natural and social systems and use an understanding of social change and social action to address the consequences of local and global human activity.
CRITICAL THINKING AND PROBLEM SOLVING
Identify and investigate problems, evaluate information and its sources, and use appropriate methods of reasoning to develop creative and practical solutions to personal, professional and community issues.

CULTURAL AWARENESS
Use an understanding of the variations in human culture, perspectives and forms of expression to constructively address issues that arise out of cultural differences in the workplace and community.

PROFESSIONAL COMPETENCE
Demonstrate and apply the knowledge, skills and attitudes necessary to enter and succeed in a defined profession or advanced academic program.

SELF-REFLECTION
Assess, examine and reflect on one’s own academic skill, professional competence and personal beliefs and how these impact others.

Core Outcomes mapping: www.pcc.edu/resources/academic/core-outcomes/

DEGREE AND CERTIFICATE OUTCOMES
Please see www.pcc.edu/resources/academic/degree-outcome/index.html

STUDENT PROFILE
Portland Community College served almost 90,000 students through credit and noncredit instruction 2013-2014. The following reflect characteristics of students enrolled in the fall 2013 term.

<table>
<thead>
<tr>
<th></th>
<th>Credit</th>
<th>Non-Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Female</td>
<td>53%</td>
<td>61%</td>
</tr>
<tr>
<td>Male</td>
<td>47%</td>
<td>39%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>67%</td>
<td>61%</td>
</tr>
<tr>
<td>African-American</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>American Indian/Alaskan Native</td>
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<td>1%</td>
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<tr>
<td>Asian</td>
<td>7%</td>
<td>10%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>International</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Multi-Racial</td>
<td>5%</td>
<td>2%</td>
</tr>
</tbody>
</table>

STUDENTS RIGHT TO KNOW
In the fall term of 2010, 1,247 first time, full time, certificate or degree seeking students entered PCC. After three years, 19% of the students had graduated from PCC and 15% had transferred to other higher education institutions.

EQUAL OPPORTUNITY STATEMENT
www.pcc.edu/about/affirmative-action/

NONDISCRIMINATION
The College prohibits unlawful discrimination based on race, color, religion, national origin, sex, marital status, disability, veteran status, age, sexual orientation, or any other status protected by federal, state, or local law in any area, activity or operation of the College. The College also prohibits retaliation against an individual for engaging in activity protected under this policy, and interfering with rights or privileges granted under anti-discrimination laws.

In addition, the College complies with applicable provisions of the Civil Rights Act of 1964 (as amended), related Executive Orders 11246 and 11375, Title IX of the Education Amendments Act of 1972, Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act of 1990 (as amended), Uniformed Services Employment and Reemployment Rights Act ("USERRA"), and all local and state civil rights laws. Under this policy, equal opportunity for employment, admission, and participation in the College’s programs, services, and activities will be extended to all persons, and the College will promote equal opportunity and treatment through application of this policy and other College efforts designed for that purpose.

Kimberly Baker-Flowers, Director
Office of Equity and Inclusion
DC 300
971-722-5841

Maria Mendez,
District Section 504 Coordinator
DC 306
971-722-5851

Dick Magruder
Title IX Athletics Coordinator
CA PE 101
971-722-5513

THE PCC FOUNDATION
Sylvania Campus
College Center (CC), Room 234
971-722-4382

WHERE OPPORTUNITY HAPPENS
The PCC Foundation makes opportunity happen. As the only non-profit organization dedicated to supporting PCC, the Foundation helps students access education by awarding scholarships and providing vital educational opportunities for our community. To learn more, go to www.pcc.edu/foundation.

PCC FOUNDATION BOARD OF TRUSTEES
2014-2015
Kimberly Cooper, President
Cheryl Burgermeister, Secretary-Treasurer
Peter Bauer
Jeremy Brown, ex-officio
Janice Burger
Thane Cleland
Betty Duvall
Mark Enger
Denise Frisbee, ex-officio
Michael Gentry
Clare Hamill
Marion Levitan
Max Lyons
Lionel Maldonado
J. Brian Monihan
Chris Neilsen
Vanessa Nelson
Deanna Palm, ex-officio
Harvey Platt
Janet Rash
Barbara Raz
Marty Reser
Alan Sprott
Dick Stenson, Immediate Past President
Jeff Van Raden
Kristin Watkins, ex-officio
Ron Wilkinson
Abushakrah, Janice L.  
Instr/Gerontology  
BA, Theology, Marylhurst University, OR  
PHD, Sociology, U Colorado Boulder, CO  

Aditham, Revathi  
Treasury Analyst  

Adler, Valorie E.  
Coord/Resource Ctr  
BS, Applied Design, Portland State University, OR  
MS, Educational Policy & Mgmt, Portland State University, OR  

Aguila, Oscar R.  
Supv/Campus Custodial Serv  

Alcaine, Olivia  
Spec/Coop Ed/Stndt Employment  
BA, History, Portland State University, OR  
MA, History, Portland State University, OR  
MED, Adult Basic Education, Oregon State University, OR  

Aleman, Yohannes  
Mgr/Student Account System  
BS, Business Administration, *University of Phoenix  

Alexander, Marilyn  
Instr/Landscape  
BS, Horticulture, Washington St University, WA  
ACERT1, Landscape Service Technician, Portland CC, OR  
ACERT2, Landscape Design, Portland CC, OR  
AAS, Landscape Technology, Portland CC, OR  

Allen, Ray A.  
Spec/Employment  
BA, East Asian Studies, University of Oregon, OR  

Allen, Robert J.  
Instr/ESOL  
BA, Humanities, Michigan State University  
MS, Linguistics, Illinois Institute of Tech, IL  

Allison, Andrea L.  
Instr/Nursing  
CERT, Nursing, Columbia Basin College, WA  
AA, Nursing, Columbia Basin College, WA  
BS, Nursing, Gonzaga University, WA  
MN, Nursing, Washington St University, WA  

Altree, Lawrence E.  
Instr/Aviation Sci  
CERT, Aviation Maintenance Technolgy, Lane CC, OR  
AS, Aviation Maintenance Technolgy, Lane CC, OR  

Alzner, Cathy J.  
Instr/Hist  
BA, History, Portland State University, OR  
MA, History, Portland State University, OR  

Anderson, Barry C.  
Instr/Biology  
BS, General Studies, Portland State University, OR  
MS, Biology, Portland State University, OR  
PHD, Environmental Studies, Portland State University, OR  

Anderson, Clarice G.  
Coord/Fin Aid  
BS, Elementary Education, Western Oregon University, OR  

Anderson, Kelly J.  
Accountant I  
AA, General Studies, Portland CC, OR  

Andres, Mark S.  

Instr/Art/Painting  
Annen, Jerome V.  
Coord/Resource Ctr  
BS, Resource Economics, Oregon State University, OR  
BS, Agricultural Economics, Oregon State University, OR  
Annus, Michael E.  
Video Producer  
BS, Anthropology, University of Oregon, OR  
MA, Anthropology, Indiana U Bloomington, IN  
MFA, Film & Video, U Iowa, IA  

Ansley, Shannon E.  
Instr/Biology  
MS, Biology, U South Florida, FL  

Apotheker, Alison M.  
Instr/Comp & Lit  
BA, Communications, U Massachusetts Amherst, MA  
MFA, Creative Writing, U Arkansas Main Cam, AR  

Armontrout, David E.  
Instr/Social Science  
AA, General Studies, El Camino College, CA  
MA, History, Portland State University, OR  

Armstrong, Gayle D.  
Spec/Employment  
BA, English, Southern Utah University, UT  
MA, English, New Mexico St U Main Cam, NM  

Arnold, James M.  
System Analyst  
AS, Computer Science & Application, Glenville St C, WV  
BS, Computer Information Systems, U Charleston, WV  

Arthur, Stephen  
Coord/Stud Ldrshp  
Asbra, Kelly P.  
Occu Cluster Trainer  
MS, Ed Policy,Foundation & Admin, Portland State University, OR  
BS, Ed Policy,Foundation & Admin, Portland State University, OR  

Aubertin, Marc G.  
Mgr/Accounts Receivable  

Backes, Gabriele R.  
Instr/Chem  
BS, Chemistry, Ruhr Universitait Bochum  
MS, Chemistry, Ruhr Universitait Bochum  
PHD, Chemistry, Ruhr Universitait Bochum  

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  

Badri, Dorothy A.  
Spec/Acad Advising  
BA, Psychology, Seattle University, WA  

Bailey, Christine Lee S.  
Spec/Comm Resource/411345  
BA, Social Science, Portland State University, OR  
MS, Educational Policy Found & Adm, Portland State University, OR  

Instr/Art/Painting  
Annen, Jerome V.  
Coord/Resource Ctr  
BS, Resource Economics, Oregon State University, OR  
BS, Agricultural Economics, Oregon State University, OR  
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Asbra, Kelly P.  
Occu Cluster Trainer  
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MA, Univ Central Missouri, MO  
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BA, Art History, Portland State University, OR  
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BS, Criminal Justice Admin, San Jose State University, CA  
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BA, English, Seattle University, WA  
BA, Spanish, Seattle University, WA  
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BS, Business Administration, Portland State University, OR  
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AA, Art, College of Southern Idaho, ID  
BFA, Visual Arts, Boise State University, ID  
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BS, Nursing, University of Vermont, VT  
MS, Family Nurse Practitioner, SUNY Stony Brook, NY

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AS, Dental Hygiene, Portland CC, OR  
BS, General Studies, Eastern Oregon University, OR  
MS, Ed Policy,Foundation & Admin, Portland State University, OR

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BS, Computer Science, California St U- Chico, CA  
MS, Software Engineering, Portland State University, OR  
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Instr/Music

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BA, Psychology, Western Washington Univ, WA  
MA, Counseling Psychology, Lewis & Clark College, OR

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BS, Biology, Univ Central Missouri, MO  
MFA, Art, N Illinois U, IL

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BS, Biology, U of Southern California, CA  
MS, Entomology, Washington St University, WA  
PHD, Horticulture, Oregon State University, OR

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BA, Public Administration, University of Oregon, OR

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BA, Linguistics, U of CA/Santa Cruz, CA  
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Spec/Fire Protection Tech Prog  
BS, Fire Science, Univ Central Missouri, MO  
MS, Industrial Safety, Univ Central Missouri, MO

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MS, Educational Policy Found & Adm, Portland State University, OR

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BA, Art, Wake Forest U, NC
MA, Womens Studies, University of Leeds, England
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BS, Political Science, Portland State University, OR
MS, Ed Policy,Foundation & Admin, Portland State University, OR
ACERT, Teaching Adult Learners, Portland State University, OR

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BA, English, University of Puget Sound, WA
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MA, Art, U Wisconsin Madison, WI
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BS, Psychology, University of Oregon, OR
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BA, English, Portland State University, OR
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BA, Spanish, Beloit C, WI
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MAR, Interior Architecture, University of Oregon, OR
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BS, Psychology, Portland State University, OR
MS, Education Counseling, Portland State University, OR
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MA, English, Georgetown U, DC
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BS, Zoology, Ohio St U Main Cam, OH
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BS, Curriculum & Instruction, University of Oregon, OR
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BA, English, Weber State University, UT

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MS, Entomology, Cornell University, NY

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Fischer, Joseph M.
Associate Dean/Student Develop
MED, College Student Servcs Admin, Oregon State University, OR
PHD, Education, Oregon State University, OR

Fisher, William F.
<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coord/Sales Operations</td>
<td>Fitzgerald, Elizabeth P.</td>
<td>CERT, Video Production Internship, Portland CC, OR F, Multimedia</td>
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<tr>
<td>Flanary, Allinee K.</td>
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<tr>
<td>Flores, Gene</td>
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<tr>
<td>Flynn, Robert J.</td>
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<td>BA, Economics, U Massachusetts Amherst, MA MA, History, U Kentucky Main Camp, KY PhD, Philosophy, U Kentucky Main Camp, KY</td>
</tr>
<tr>
<td>Folberg, Lisa M.</td>
<td>Instr/Math</td>
<td>BS, Mathematics, Portland State University, OR MST, Mathematics, Portland State University, OR</td>
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<td>Folberg, Ross</td>
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<tr>
<td>Fong, April A.</td>
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<td>BA, Biology, U of California/Berkeley, CA BA, Psychology, U of California/Berkeley, CA MS, Entomology, U of California/Davis, CA</td>
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<td>Fordham, Traci</td>
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<td>Foster, Tara O.</td>
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<td>Foty, Terrell V.</td>
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<td>Public Safety Lieutenant</td>
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<tr>
<td>Frank, Simone J.</td>
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<td>Freed, Andrew P.</td>
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<td>Freeman, Will B.</td>
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<td>BS, Mathematics, Western Washington Univ, WA BS, Biochemistry, Western Washington Univ, WA MS, Mathematics, Western Washington Univ, WA</td>
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<tr>
<td>Fresh, Wendy J.</td>
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<td>Friedle, Christina M.</td>
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<td>Galba-Machuca, Debra M.</td>
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<td>Garber, Susan M.</td>
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Dean/Student Dev
BA, Sociology, Oregon State University, OR
MA, Interdisciplinary Studies, Oregon State University, OR

Rodriguez-Garcia, Luis E.
Associate Dean/Student Develop
BA, Spanish, Oregon State University, OR
BA, Anthropology, Oregon State University, OR
MS, Management and Org Leadership, Warner Pacific College, OR

Rose, Christopher L.
Instr/Comp & Lit
BA, English, University of Washington, WA
BA, Sociology, Central Washington U, WA
MA, English, Central Washington U, WA

Rose, Darin J.
Supv/Food Srvcs

Ross, Rebecca M.
Instr/Math
BA, Mathematics, Humboldt State University, CA
MS, Mathematics, Portland State University, OR
MAT, High School/Middle Level Edu, Western Oregon University, OR

Ross, Ronald E.
Instr/Comp & Lit
BA, English Literature, University of Arizona, AZ
MA, English Literature, Northern Arizona University, AZ

Roy, Denise A.
Instr/Arch Drafting
BS, Family Economics & Management, S Illinois U Carbondale, IL
MUP, Urban and Regional Planning, University of Oregon, OR
MAR, Architecture, University of Oregon, OR

Ruiz, Maria L.
Spec/Comm Resource

Rust, Elissa E.
Instr/Comp & Lit
BA, English, Oregon State University, OR
MFA, Creative Writing, Arizona State Univ. Main, AZ

Ruzicka, Bryan J.
Spec/Acad Advising

Ryslinge, Birgitte
Campus President/Sylvania
BS, Business Admin - Marketing, University of the Pacific, CA
MBA, Strategic Planning, U of California/Berkeley, CA
MA, Psychology, University of the Pacific, CA
MA, Organizational Psychology, Alliant International Univ, CA
PhD, Organizational Psychology, Alliant International Univ, CA

Sackman, Paul D.
Instr/Auto Serv Tech

Saccomanto, Ana P.
Instr/Med Lab Tech

Sacramento, Ana P.
Instr/Auto Serv Tech
ACERT2, Automotive Service Techno, Portland CC, OR
AAS, Automotive Service Techno, Portland CC, OR

Sacramento, Ana P.
Instr/Med Lab Tech

BS, Environmental Science, New Univ of Lisbon, PORTUGAL
MS, Environmental Engineering, University of Leeds, England
AAS, Medical Laboratory Technology, Portland CC, OR

Sahim, Daud M.
Spec/Employment
BS, Business Education, Brigham Young U Hawaii, UT
MED, Educational Psychology, "U Hawaii Sys Off, HI

Saito, John S.
Div Dean
BS, Biology, U Hawaii Manoa, HI
MPH, Environmental & Int'l Health, U Hawaii Manoa, HI

Salim, Keri L.
Spec/Learning Skills
BS, Housing Studies, Oregon State University, OR

Salinas, Teresa
Coord/Stud Outreach Orient
BS, Business Administration, Portland State University, OR

Salyer, Andrea M.
Asst Coord/Stud Ldrshp
BS, Housing Studies, Oregon State University, OR

Samson, Shelly
Spec/Acad Advising
AAS, Accounting, Hood C, MD
BS, Business Administration, Eastern Oregon University, OR

Sanders, Karen M.
Div Dean
MAT, Adult Education, Alaska Pacific University, AK

Sanders, Tammy R.
Accountant II
BA, Environmental Studies, Connecticut C, CT
MS, Marine Policy, U Delaware, DE
CERT, Accounting, Portland State University, OR

Sanders, Todd M.
Instr/Mech Eng
BS, Civil Engineering, Michigan State University
MS, Marine Studies, U Delaware, DE
PHD, Oceanography, U Delaware, DE

Sandlin, Julianne P.
Instr/Art Hist
BS, Housing Studies, Appalachian State Univ, NC
MA, Art History, U S Carolina Columbia, SC
PHD, Art History, Florida St U, FL

Sandquist, Jackie L.
Human Resource Rep
BA, History, La Sierra University, CA
BA, Political Science, La Sierra University, CA
MED, Secondary Education, Western Oregon University, OR

Sandrock, David R.
Instr/Landscape
BS, Horticulture, U Georgia, GA
BS, Landscape Management, U Georgia, GA
MS, Horticulture, U Georgia, GA
PHD, Horticulture, Oregon State University, OR

Santrymer, James B.
Instr/Comp Info Sys
BS, Computer Science, California St U-Sacramento, CA
ACERT, Teaching Adult Learners, Portland State University, OR
MS, Computer Science, Portland State University, OR

Savage, Nathan
Instr/Graphic Design
BFA, Communication Design, Texas State U-San Marcos, TX

Schatz, Mary L.
Instr/Comp Appl/Office Syst

BS, Business Administration, University of Montana, MT
MAT, Teaching, Williamette University, OR

Schmidt, Suzanne
Coord/Student Conduct & Ret
BS, Therapeutic Recreation, California St U-Northridge, CA
MS, Counseling, Oregon State University, OR

Schmitt, Loraine P.
Dir/Distance Ed

Schneider, Arthur
Instr/Comp Appl/Office Syst
BS, Business Administration, California St U- Chico, CA
BA, Business Education, California St U- Chico, CA
MS, Counseling, California St U- East Bay, CA

Schneider, James P.
Instr/Chem

Schnee-Anthony, Monica H.
Instr/Psych
BS, Occupational Therapy, W Michigan U, MI
MA, Counseling, Ball St U, IN
PSYD, Industrial Psychology, U.S. International U, CA

Schodorf, Perri K.
Coord/Intl Admin & Enrlmt Bi5%
CERT, Student Affairs in Higher Ed, Portland State University, OR
CERT, Teaching Adult Learners, Portland State University, OR
MA, Ed Policy,Foundation & Admin, Portland State University, OR

Schoen, Joel D.
Instr/Social
MS, Sociology, University of Oregon, OR
PHD, Sociology, University of Oregon, OR

Schoo, Briar
Mgr/Sustainability
BA, Sustainability, Arizona State Univ. Main, AZ
BS, Justice Studies, Arizona State Univ. Main, AZ
MA, Sustainability, Arizona State Univ. Main, AZ

Schottland, Henry
TSS Manager
BS, Biology, Dartmouth C, NH
MS, Indus & Operations Engineer, Univ Michigan - Ann Arbor, MI

Schramm, Sandra A.
Dir/Occupational Programs
BS, Home Economics Education, Texas Tech U, TX
MA, Rehabilitation Counseling, California St U- Fresno, CA

Schoeder, Vicki
Instr/Physics
PHD, Geophysics, University of Washington, WA

Schwartz, Kelly R.
Human Resource Rep
MBA, Business Administration, Univ of Phoenix - Main, AZ

Scott, Cheryl L.
Dean/Instruction
BS, Sociology, University of Oregon, OR
MBA, Management, Augusta State University, GA
PHD, Education, Oregon State University, OR

Scott, Matthew J.
Instr/Welding
AAS, Welding Technology, U Alaska Anchorage CC, AK
BS, Education, Northern Arizona University, AZ

Scott, Victoria L.
Ref Librarian
BA, Liberal Arts, The Evergreen St College, WA
MA, English, University of Washington, WA
MLS, Library Science, University of Washington, WA
Seaman, Peter
Online Development Facilitator
BS, Government, US Coast Guard Acad, CT
MS, Instructional Systems Tech., Indiana U Bloomington, IN
Seder, Phillip A.
Instr/Bus Admin
BS, Transportation and Logistics, University of Oregon, OR
MBA, Business, Columbia Univ, City of NY, NY
Seely, Sara R.
Ref Librarian
MLS, Library & Information Science, University of Washington, WA
Seery, Nicole M.
Asst Coord/Stud Ldrshp
BS, Pre-MBA, Philadelphia University, PA
Semura, Patricia M.
Instr/Communication Studies
BED, Speech, U Hawaii Manoa, HI
MA, Speech, U Hawaii Manoa, HI
Sengdeng, Kristin D.
Spec/Student Res
BS, Social Science, Boise State University, ID
MS, Ed Policy, Foundation & Admin, Portland State University, OR
Severson, Mary J.
Associate Dean/Student Develop
BA, German, Augustana C, SD
BA, Religion, Augustana C, SD
MA, Systematics, Luther Theol Sem, MN
Seymour, Christopher L.
Spec/Acad Advising
BA, Fine Arts, Georgetown U, DC
Shapiro, Robin
Ref Librarian
AA, Liberal Arts, St Petersburg College/JC, FL
BA, English, U South Florida, FL
MLS, Library Science, U N Carolina - Chapel Hill, NC
Shaw, John C.
Instr/Trades and Industry
AGEN, General Studies, Yakima Valley CC, WA
BBA, Management, American Intercontinental U, GA
MED, Instructional Technology, American Intercontinental U, GA
Shaw, John M.
Instr/Hist
BA, History, Thomas A. Edison St Col, NJ
MA, American Indian Studies, University of Arizona, AZ
PHD, US History, University of Arizona, AZ
Shelden, Wendy A.
Instr/Nursing
BS, Nursing, E Michigan U, MI
MN, Family Nurse Practitioner, Oregon Health Science U, OR
Shelley, Christopher W.
Instr/Hist
BS, History, Portland State University, OR
MA, History, Portland State University, OR
Sherer, Margaret
Instr/Nursing
BS, Biology, Wittenberg U, OH
BSN, Nursing, Northwestern U, IL
MS, Nursing, Oregon Health Science U, OR
Sherwood, Tobias C.
Spec/Student Res
BA, English, Loyola Marymount University, CA
Shingledecker, Diane G.
Instr/Comp Appl/Office Syst
BA, Psychology, Lafayette CA, PA
MAT, Education, Monmouth C, NJ
Shmakov, Kristine L.
Instr/World Lang/Russian
Shotwell, Hsiao-Yun
Instr/Chinese
BA, Chinese, Nat Chung Hsing U-Tai..., Taiwan
MA, Teaching English to Others, Portland State University, OR
Simmons, Traci R.
Spec/Learning Skills
BS, Health Studies: Community, Portland State University, OR
BS, Health Science, Portland State University, OR
Simon, Benjamin E.
Instr/Biology
BS, Biological Sciences, Colorado State University, CO
BS, Fishery Biology, Colorado State University, CO
PHD, Microbiology, Oregon State University, OR
Simonds, Kurt P.
Dean/Instruction
AB, English & American Literature, Harvard U, MA
MFA, English, U Pittsburgh Main Camp, PA
Simonds, Stephen P.
Instr/Math
MS, Mathematics, Portland State University, OR
Sin, Lap Man
Spec/Comm Resource
Sivak, Marie M.
Instr/Art
BFA, Sculpture, The University of the Arts, PA
MFA, Sculpture, Virginia Commonwealth U, VA
Smith, Barbara J.
Instr/Radiol Tech
BS, Environmental Studies, Oregon State University, OR
AAS, Radiologic Technology, Portland CC, OR
MS, Ed Policy, Foundation & Admin, Portland State University, OR
Smith, Daniel J.
Mgr/Library Circul
Smith, Douglas C.
Instr/Fire Protection Tech
AAS, Automotive Technology, Oregon Inst of Technology, OR
ZBTA, Automotive, Diesel Technology, Oregon Inst of Technology, OR
AAS, Fire Protection Technology, Portland CC, OR
Smith, Jodie K.
Supervisor/Bookstore
Smith, Kimberley D.
Instr/Sociol
BA, Sociology, Whitman College, WA
MA, Sociology, Indiana U Bloomington, IN
PHD, Sociology, Indiana U Bloomington, IN
Smith, Mark R.
Instr/Vis Arts
BS, Art, Western Oregon University, OR
BFA, Art, Cooper Union, NY
MFA, Painting, Portland State University, OR
Smith, Rachael M.
Advisor/Fin Aid
AA, Oregon Transfer, Portland CC, OR
BA, Religious Studies, Willamette University, OR

Smith-Abbott, Mary A.
Instr/Skills Ctr
AB, English, Anna Maria C Women, MA
MPA, Public Admin, Suffolk U, MA

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AS, Auto Collision Repair Techno, Portland CC, OR

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Instr/Psych
MS, Psychology, Portland State University, OR
PhD, Psychology, Portland State University, OR

Sofronova-Allen, Larissa I.
Instr/ESOL
AM, Foreign Language, Kuban State University Russia
PhD, Educational Psychology, Highest Cert C/Soc.Repblic, RU

Sones, Virginia A.
Instr/Math
BA, Mathematics, Mills College, CA
MS, Env Systems (Math Mod), Humboldt State University, CA

Songer, Thomas M.
Instr/Math
BS, Mathematics, Portland State University, OR
BS, Philosophy, Portland State University, OR
BS, Sociology, Portland State University, OR
MST, Mathematics, Portland State University, OR

Sonnieitner, Michael W.
Instr/Poli Sci
AB, Political Science, Whitman College, WA
MA, Political Science, University of Minnesota
PhD, Political Science, University of Minnesota

Sorensen, Karen M.
Online Development Facilitator

Sparks, John S.
Instr/ESOL
MA, Telsol, Portland State University, OR

Spaziani, Marc d.
Instr/Phys Ed
BS, Exercise and Sport Science, Oregon State University, OR
MS, Exercise and Sport Science, Oregon State University, OR

Spillum, Laurel E.
Instr/Dev Ed
BS, Elementary Education, Western Oregon University, OR
MED, College Student Servcs Admin, Oregon State University, OR

Spoddeck, Heiko P.
Instr/Dev Ed
BS, Physics, Technical Univ of Berlin, GER
MS, Physics, Technical Univ of Berlin, GER

Springer, Rebecca J.
Spec/Student Res
BA, Sociology, Luther C, IA
MA, Sociology, Northern Arizona University, AZ

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Instr/Auto Body Rep

Stark, Melissa J.
Spec/Acad Advising
BS, Psychology, Eastern Oregon University, OR

Stauffer, Charles W.
Mgr/Bond Facilities Project

BA, Interdisciplinary Studies, Marylhurst University, OR
BS, Management, Marylhurst University, OR
MS, Management, Marylhurst University, OR

Steele, Robert W.
Instr/Bldg Trades
BS, Physical Education, CA St Polytechnic U-Pomona, CA

Steinmetz, Dieterich V.
Div Dean
BA, Biology, Yale U, CT
MA, Individualized Program, University of Oregon, OR
MD, Medicine, Oregon Health Science U, OR

Stephanson, Susan M.
Coord/Bus Trng & Ed Dev
AS, Transfer Program, Portland CC, OR
BS, Social Science, Portland State University, OR

Stevens, Rachel A.
Instr/Comp & Lit
MA, English, University of Washington, WA

Stewart, Scott L.
Instr/Mach Tech
AAS, Machine Manufacturing Techno, Portland CC, OR

Stockton, Matthew S.
Instr/Philosophy
BS, Anthropology, University of Oregon, OR
MA, Philosophy, University of Montana, MT
MA, Counseling Psychology Marr/Fam, Lewis & Clark College, OR

Stone, Debbie E.
Coord/Women’s Resource
MA, Counseling Psychology, Pacifica Graduate Inst, CA

Stone, Kathy L.
Accountant II

Stone, Rachel A.
Instr/Psych
BS, Psychology, Portland State University, OR
MS, Counseling, Portland State University, OR

Stout, David F.
Div Dean
BA, German Literature, University of Rochester
MA, German Literature, Cornell University, NY
PhD, German Literature, Cornell University, NY

Stoutenburg, Nancy M.
Counselor
MA, Applied Behavioral Science, Bastyr University, WA

Stribling, Patricia A.
Supervisor/Bookstore

Stromholt, Kitty M.
Instr/Psych
BA, General Studies, Portland CC, OR

Suarez, Roberto B.
Coord/Stud Outreach Orient
BA, Philosophy, Fordham U, NY
MS, Ed Policy,Foundation & Admin, Portland State University, OR

Sullivan, Joanna D.
Instr/ESOL
BA, English, Swarthmore C, PA
MA, Comparative Literature, U Wisconsin Madison, WI
MA, African Languages & Literature, U Wisconsin Madison, WI
PhD, African Languages & Literature, U Wisconsin Madison, WI

Sutton, Gary S.
Mgr/Bond Facilities Project
Swanson, Greta S.
Instr/Dev Ed/Math
BS, Chemistry, University of Oregon, OR
BS, Mathematics, University of Oregon, OR
MS, Mathematics, Portland State University, OR

Swint, Steven R.
Coord/Education Center
BA, Communication Arts, Pembroke St U, NC
MA, Counseling, U N Carolina - Charlotte, NC

Talbot, Kay M.
Coord/Sr Vol Lit Tutor Prg
BA, Mgmt Of Human Resources, George Fox University, OR
MS, Educational Policy & Mgmt, Portland State University, OR

Tang, Cara L.
Instr/Comp Info Sys

Tangredi, Patrick J.
Instr/Theater Arts
BA, English, Massachusetts College, MA
MFA, Theatre Arts, Tulane University, LA

Terefe, Mulu A.
Spec/Employment/Bil5%

Terry, David W.
Internal Auditor
BS, Business Administration, Eastern Oregon University, OR

Thomas, Marilyn
Instr/Biology
BS, Natural Resources Management, CA Polytechnic-San Luis Ob, CA
MST, Biology, Portland State University, OR

Thompson, Carmen P.
Instr/History
BS, Business Admin - Marketing, Portland State University, OR
MA, African American Studies, City University of NY, NY
PHD, History, U of IL @Urbana-Champaign, IL

Thompson, Penny S.
Coord/Resource Ctr
BA, Humanities, U of California/Irvine, CA
MED, Education: ESL, Azusa Pacific University, CA

Thomson, Diane L.
Asst Coord/Women’s Resource
BA, Management and Org Leadership, George Fox University, OR

Thurber, Phillip
Instr/Math
MS, Mathematics, University of Oregon, OR
PhD, Mathematics, University of Oregon, OR

Tillery, Sarah
Dir/Allied Health
BA, Women’s Studies, U of California/Irvine, CA
BA, English, U of California/Irvine, CA
MA, Women’s Studies, San Diego State University, CA
PhD, Women’s Studies, U Maryland C Park, MD

Tolva, Magdalena M.
Spec/Acad Advising
BA, Psychology, Portland State University, OR

Tompkins, Krist J.
Instr/World Lang/German
BA, English, Portland State University, OR
BA, German, Portland State University, OR
MA, German, University of Oregon, OR

Torgeson, Sander
Instr/CAT Dealer Svc Tech Trg
AA, Automotive Service Specialist, SUNY A&T C Alfred, NY

Totten, Delyse E.
Instr/Bus Admin

Tran, Van T.
Spec/Employment/Bil5%

Triplett, Jeff S.
Dean/Instruction
BA, Psychology, Oregon State University, OR
MED, Counseling & Guidance, Oregon State University, OR

Truman, Glen F.
Instr/Ind Draft/illus
BS, Industrial Arts Education, Oregon State University, OR

Tubbin, Stephen A.
Mgr/Assoc Bond Project

Underwood, Jan M.
Instr/World Lang/Spanish
MA, Foreign Lit & Language, Portland State University, OR
CERT, Tesl, Portland State University, OR

Urbina, Joe M.
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BA, Liberal Studies, California St U - L.A., CA
MED, Adult Education, Eastern Washington U, WA

Urbina, Marlo M.
Spec/Student Res
BS, Sociology, Oregon State University, OR

Van Beeck, Kathryn R.
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BS, Nursing, U Minnesota Cntl Off, MN
MS, Nursing, University of Portland, OR
CERT, Gerontological Nursing, Oregon Health Science U, OR

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MA, Education, *University of Phoenix

Vanderford, Virginia L.
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AS, General Studies, Weber State University, UT
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Vega, Emiliano D.
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Vergun, Robert A.
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PhD, Psychology, U Massachusetts Amherst, MA

Victorino, Robert J.
Spec/EMS Prog
AAS, Emergency Services, Austin CC, TX

Vincent, Bradford
Instr/Real Estate
BS, Business Administration, Portland State University, OR
MST, Business Education, Portland State University, OR
Vins, Alexander
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Volinski, Janice L.
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BS, Business and Admin Studies, Lewis & Clark College, OR
Vollet, Carly M.
Instr/Chemistry
BS, Mathematics, Portland State University, OR
MS, Mathematics, Portland State University, OR
Waddell, Kristen M.
Supv/Library
AB, Communication Studies, UCLA Los Angeles, CA
MLS, Library & Information Science, San Jose State University, CA
Wagner, Margo
Spec/Marketing
Wagner, Maria W.
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BA, English, Portland State University, OR
MLS, Library & Information Science, University of Washington, WA
Wagner, Robert A.
Dir/Government Relations
BA, Political Science, Portland State University, OR
MA, Public Policy: Philo & Social, George Washington U, DC
Walters, Patrick
Instr/Comp & Lit
BA, English, SUNY Buffalo Main Camp, NY
MA, English, SUNY Buffalo Main Camp, NY
Wamsley, Lori H.
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BBA, Management, University of Portland, OR
MLS, Library Science, Emporia State University, KS
MS, Instructional Design & Tech, Emporia State University, KS
PhD, Education, Oregon State University, OR
Ward, Laura J.
Mgr/Energy Resource
Warneke, George J.
Instr/Auto Body Rep
Washburn, Charles J.
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BA, Art, Lewis & Clark College, OR
MFA, Ceramics, Rochester Inst Tech, NY
Washington, Rebecca L.
Coord/Career Svcs
BS, Psychology, Portland State University, OR
MPA, Public Administration, Portland State University, OR
Watkins, Kristin G.
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BA, International Studies, Virginia Poly Inst & St U U, VA
MA, Public Affairs, University of Minnesota
Watson, Susan T.
Instr/Comp Appl/Office Syst
BA, International Affairs, Lewis & Clark College, OR
G, International Management, Portland State University, OR
Webb, Erin M.
Spec/Comm Resource
BS, Psychology, Portland State University, OR
MA, Art Therapy, Marylhurst University, OR
Weber, Christine M.
Instr/Vis Arts
BA, Interdisciplinary Studies, Western Oregon University, OR
MA, Art History, University of Washington, WA
Weimer-Dale, Pamela S.
Spec/Employment
BA, Business Education, Oregon State University, OR
Wells, Tracee Y.
Spec/Employment
BM, Music, Kentucky St U, KY
Wenger, Daniel O.
Div Dean
Wennig, Ann V.
Instr/Health Information Mgt.
BS, Health Care Administration, Concordia University, OR
Wessel, Nancy
Div Dean
BA, Sociology, S Illinois U Carbondale, IL
MA, Sociology, S Illinois U Carbondale, IL
MA, Test, S Illinois U Carbondale, IL
PhD, Sociology, S Illinois U Carbondale, IL
Wheeler, William V.
Instr/Comp & Lit
MFA, Literature, Warren Wilson C, NC
Wherry, Jonathan D.
Instr/Math
MS, Mathematics, University of Oregon, OR
White, Rita
Spec/Employment
Whitehill-Baziuk, Gina S.
Mgr/Bond Public Involvement
BA, Sociology, S Illinois U Carbondale, IL
MA, Sociology, S Illinois U Carbondale, IL
PhD, Sociology, S Illinois U Carbondale, IL
Whitford, John P.
Spec/Acad Advising
BS, Information Systems, George Fox University, OR
Whitney-Bradley, Stephanie B.
Instr/World Lang/French
AA, Undeclared, Portland CC, OR
BA, French, University of Oregon, OR
MA, French, University of Oregon, OR
Whir, William S.
Instr/Anthropol
AB, Anthropology, U of California/Berkeley, CA
MA, Anthropology, U of California/Berkeley, CA
PhD, Anthropology, U of California/Berkeley, CA
Wilder, Lorene V.
Advocate/Comm Resource
Willebrand, Richard G.
Instr/Trades and Industry
BFA, Drama, Fort Wright College
Williams, Jackilyn E.
Instr/EMT
AS, Nursing, RN, Imperial Valley College, CA
BS, Nursing, National University, CA
MN, Nursing, University of Phoenix
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williams, Lynda A.</td>
<td>Spec/Acad Advising</td>
<td>BA, English Literature, California St U- Dmngz Hlls, CA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MS, Counseling and Educ. Leadership, California St U- L.A., CA</td>
</tr>
<tr>
<td>Williams, Sandra N.</td>
<td>Instr/Elec Eng</td>
<td>BS, Electrical and Electronics Eng, University of Craiova, ROM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MS, Electrical and Electronics Eng, University of Craiova, ROM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MBA, Business Administration, Marylhurst University, OR</td>
</tr>
<tr>
<td>Williams, Tamara J.</td>
<td>Spec/Coop Ed/Stndt Employment</td>
<td>MS, Ed Policy, Foundation &amp; Admin, Portland State University, OR</td>
</tr>
<tr>
<td>Williamson, Conrad</td>
<td>Spec/Student Res</td>
<td>BA, Social Science, Marylhurst University, OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MA, Counseling Psychology, Pacifica Graduate Inst, CA</td>
</tr>
<tr>
<td>Williamson, Justina L.</td>
<td>Mgr/Workforce Dev</td>
<td>BA, Art History, University of Oregon, OR</td>
</tr>
<tr>
<td>Wilson, Diane L.</td>
<td>Mgr/Treasury &amp; Bursar</td>
<td></td>
</tr>
<tr>
<td>Wilson, Melody</td>
<td>Instr/Comp &amp; Lit</td>
<td>BA, English Literature, Portland State University, OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MA, English Literature, Portland State University, OR</td>
</tr>
<tr>
<td>Wilson, Susan L.</td>
<td>Spec/Academic Support</td>
<td>BA, Business Administration, Portland State University, OR</td>
</tr>
<tr>
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<td></td>
<td>MS, Writing, Portland State University, OR</td>
</tr>
<tr>
<td>Wilson-Figueroa, Maria E.</td>
<td>Instr/Sociol</td>
<td></td>
</tr>
<tr>
<td>Wood, Ray P.</td>
<td>Spec/Employment</td>
<td>MA, German, U N Carolina - Chapel Hill, NC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DNP, Naturopathic Medicine, N.D., Nat Coll Naturopathic Med, OR</td>
</tr>
<tr>
<td>Wood, Vanessa C.</td>
<td>Dir/Grant Development</td>
<td>BA, Communication Studies, Pacific Lutheran U, WA</td>
</tr>
<tr>
<td>Woods, Xenia M.</td>
<td>Instr/Interp Trng</td>
<td>MA, Adult Education, San Francisco State U, CA</td>
</tr>
<tr>
<td>Wortman, Lindy M.</td>
<td>Spec/Acad Advising</td>
<td>BS, Psychology, Portland State University, OR</td>
</tr>
<tr>
<td>Wright, Gayle K.</td>
<td>Instr/Radiography</td>
<td>AAS, Radiologic Technology, Portland CC, OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BS, Health Care Administration, Concordia University, OR</td>
</tr>
<tr>
<td>Wright, John S.</td>
<td>Instr/Dev Reading &amp; Writing</td>
<td>BA, English, U Kentucky Main Camp, KY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MFA, Writing, Sch Art Inst Chicago, IL</td>
</tr>
<tr>
<td>Wright, Maureen</td>
<td>Instr/Bus Admin</td>
<td>MPA, Public Admin, Harvard U, MA</td>
</tr>
<tr>
<td>Wynkoop, Terry L.</td>
<td>Instr/Nursing</td>
<td></td>
</tr>
<tr>
<td>ZATA, Nursing, Tacoma CC, WA</td>
<td>MS, Nursing, Univ of Phoenix - Main, AZ</td>
<td></td>
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<td>Zable, Anthony C.</td>
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<td>Zweben, Harry T.</td>
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COURSE DESCRIPTIONS
ALCOHOL AND DRUG COUNSELOR

AD 101. Alcohol Use and Addiction. 3 Credits.
Basic overview of addiction with emphasis on alcohol addiction. Considers physiology, psychology, treatment, prevention, recovery and relapse. Required for students wishing to enter the Alcohol and Drug Counselor Program. Audit available.

AD 102. Drug Use and Addiction. 3 Credits.
Considers current drug use and psychological/behavioral aspects of client misuse or addiction. Includes drug chemistry, physiological effects of drug use upon the body and specific treatment formats and techniques. Audit available.

AD 103. Women and Addiction. 3 Credits.
Investigates patterns of alcohol and drug use and abuse by women in our society. Explores models of treatment and recovery specific to the needs of women and the relationship of substance abuse to social issues. Audit available.

AD 104. Multicultural Counseling. 3 Credits.
Focuses on diversity of populations using addiction counseling services. Emphasizes developing sensitivity to relevant cultural differences and building skills in addressing them. Audit available.

AD 105. Aging & Addiction. 3 Credits.
Covers drug and alcohol addiction among older adults, including prescription and other drugs and alcohol, used either alone or in combination. As tolerance to the effects of alcohol and other drugs decline, aging adults have higher risk factors. Addresses issues specific to aging, including late onset addiction, effects of use on performance of activities of daily living, treatment issues and co-occurring disorders such as depression or other chronic illnesses. A multicultural perspective is used, including the role of social class and gender issues. Audit available.

AD 106. Smoking Cessation. 1 Credit.
Presents an overview of nicotine addiction and specific evidenced based practices that have been demonstrated to contribute to successful smoking cessation efforts. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

AD 107. Addiction Recovery Mentor. 3 Credits.
Presents an overview of Addiction Recovery Mentor skills, resources and evidence-based practices that have been demonstrated to contribute to successful Peer Mentor Programs. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

AD 108. Adolescence and Addiction. 3 Credits.
Examines addiction, substance use and abuse from the adolescent point of view. Includes assessment and treatment planning appropriate to this population and considers ethical and legal ramifications. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and AD 101 and AD 102. Audit available.

AD 109. Criminality and Addiction. 3 Credits.
Examines the relationship between substance abuse issues and criminal behavior. Includes assessment of risk for criminal behavior and the likelihood of reoffending and evidenced based treatment protocols relevant to the addicted criminally involved person with special emphasis on Cognitive Behavioral Therapy. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

AD 110. Substance Abuse Prevention. 3 Credits.
Presents an overview of substance abuse prevention theories and prevention programming applications. Emphasizes theories and models basic to prevention, evidence-based prevention strategies and model programs, strategic planning and outcome evaluation. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

AD 111. Gambling and Addiction I. 3 Credits.
Presents an overview of gambling addiction and evidence-based practices that have been demonstrated to contribute to successful gambling addiction treatment. This is the first course of a two-course class sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

AD 112. Gambling and Addiction II. 3 Credits.
Presents evidence-based practice and application of those skill sets to individuals presenting with gambling addiction concerns. This is the second course of a two-course sequence. Audit available. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and AD 111. Audit available.

AD 150. Basic Counseling and Addiction. 3 Credits.
Introduces basic skills required for establishing an effective professional helping relationship. Emphasizes in-class practice and feedback. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

AD 151. Basic Counseling Skills Mastery. 1 Credit.
Provides an opportunity to demonstrate a minimum level of facilitative skills required for initial practicum placement. Demonstrate mastery in responding to client behavior, content, feelings and meaning, through in-class practice and videotape review. Offered on a pass/no pass basis only. Prerequisite: AD 101. Prerequisite/concurrent: WR 122.

AD 152. Group Counseling and Addiction. 3 Credits.
Provides exposure to the concepts of group process, group development and leader facilitation skills. Emphasizes group therapy and the addiction counselor. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

AD 153. Theories of Counseling. 3 Credits.
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. Audit available.

AD 154. Client Record Management and Addiction. 3 Credits.
Provides the student the knowledge and skills needed to plan treatment and manage client records. Explores methods for making decisions regarding goals and objectives to be reached by clients during and after treatment. Covers all aspects of client record management including federal and state regulations and American Society of Addiction Medicine (ASAM) placement criteria. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

AD 155. Motivational Interviewing & Addiction. 3 Credits.
Designed to facilitate the acquisition of motivational interviewing counseling skills as applied to the arena of addiction counseling. Prerequisites: AD 101, AD 150, AD 151, WR 121. Prerequisite or concurrent: WR 122. Audit available.

AD 156. Ethical and Professional Issues. 3 Credits.
Covers ethical and legal issues relevant to the alcohol and drug counselor. Prerequisite: AD 101. Prerequisite/concurrent: WR 122. Audit available.

AD 157. Motivational Interviewing Skills Mastery. 1 Credit.
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. Coerequisite: AD 155.

AD 184. Men & Addiction. 3 Credits.
Provides an in-depth view of the biological, cultural, and sociological origins of male roles and behavior and explore the implications of this for understanding mental health, sexuality, addiction, and criminal behavior of men. Develops a framework for the essential elements of gender-specific treatment for boys and men. Audit available.

AD 201. Families and Addiction. 3 Credits.
A comprehensive survey of all topics related to family work, from intervention to recovery, covering the scope of family work with a special population of families impacted by addiction, whether current or intergenerational. Covers the initial contact with a family, defining and describing all of the possible dynamics, needs and interventions defined in current literature. Prerequisite: AD 101. Audit available.

AD 202. Trauma and Recovery. 3 Credits.
Explores the neurobiology of attachment and reward as they relate to the addictive experience. Presents models of relational healing with a strong emphasis on specific skill acquisition that can be used in treatment settings. Utilizes trauma informed and wellness informed approaches targeted to working with families in the process of recovery from addictive disease. Prerequisite: WR 122, AD 101, AD 151. Audit available.

AD 211. Alcohol & Drug: Special Studies. 1 Credit.
Not required for degree and may not be substituted for any required program courses. Audit available.

AD 212. Alcohol & Drug: Special Studies. 2 Credits.
Not required for degree and may not be substituted for any required program courses. Audit available.

AD 213. Alcohol & Drug: Special Studies. 3 Credits.
Not required for degree and may not be substituted for any required program courses. Audit available.
AD 250. Advanced Counseling and Addiction. 3 Credits.
Enhances the professional knowledge and skills of counselors preparing to
enter the field. Focuses on current evidence-based practice/best practice
models in addiction counseling, integrating a variety of conceptual theories
into a comprehensive framework for human behavior, addiction, and change.
Prerequisites: AD 101, AD 150, AD 151, WR 121. Prerequisite/concurrent: WR

AD 251. Advanced Counseling Skills Mastery. 1 Credit.
Focuses on increasing counselor empathy and communication skills. Develops
skills through in-class practice and videotape review. Offered on a pass/no pass
basis only. Co-requisite: AD 250.

AD 255. Multiple Diagnoses. 3 Credits.
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 299. Audit available.

AD 270A. Practicum: Addiction. 1-6 Credit.
Provides clinical educational experience in an addiction treatment or DUII
educational facility under the supervision of personnel who meet ACCBO
requirements. Provides the opportunity to meet the ACCBO work experience
requirements. Prerequisites: AD 102, AD 152, AD 153, AD 154, AD 155, AD 156,
AD 157, AD 278, MP 150. Corequisite: AD 270B.

AD 270B. Practicum: Addiction Seminar. 2 Credits.
Focuses on the integration and synthesis of academic preparation with "real
world" addiction counseling experience. Includes consideration of counselor
self-care, healthy work practice, professional ethics and ongoing professional
development. Corequisite: AD 270A. Audit available.

AD 278. Practicum Preparation. 1 Credit.
Provides student with the opportunity to demonstrate facility with the
documentation required for the AD practicum course, and develop an
individualized plan for success in practicum. Prerequisite/Concurrent: AD 101,
AD 102, AD 150, AD 151, and WR 121.

ALTERNATIVE LEARNING CENTER

ALC 20A. Math 20 Lab - 0 credits. 0 Credits.
Provides a review of individually chosen topics in Basic Math (Math 20).
Completion of this course does not meet prerequisite requirements for other
math courses.

ALC 20B. Math 20 Lab - 1 credit. 1 Credit.
Provides a review of individually chosen topics in Basic Math (Math 20).
Requires a minimum of 30 hours in the lab. Completion of this course does not
meet prerequisite requirements for other math courses.

ALC 20C. Math 20 Lab - 2 credits. 2 Credits.
Provides a review of individually chosen topics in Basic Math (Math 20).
Requires a minimum of 60 hours in the lab. Completion of this course does not
meet prerequisite requirements for other math courses.

ALC 20D. Math 20 Lab - 3 credits. 3 Credits.
Provides a review of individually chosen topics in Basic Math (Math 20).
Requires a minimum of 90 hours in the lab. Completion of this course does not
meet prerequisite requirements for other math courses.

ALC 50. English Skills Lab - 0 credits. 0 Credits.
Provides an individualized plan of study to improve English grammar,
punctuation, writing, reading, and/or communication skills. Includes tutoring,
use of textbooks/workbooks for assignments, and/or computer software and
other media.

ALC 51. English Skills Lab - 1 credits. 1 Credit.
Provides an individualized plan of study to improve English grammar,
punctuation, writing, reading, and/or communication skills based on 30 hours
of study. Includes tutoring, use of textbooks/workbooks for assignments, and/or
computer software and other media. May be taken three times for credit.
Prerequisite: Placement into WR 80, RD 80, ESOL 250 or ESOL 252.

ALC 52. English Skills Lab - 2 credits. 2 Credits.
Provides an individualized plan of study to improve English grammar,
punctuation, writing, reading, and/or communication skills based on 60 hours
of study. Includes tutoring, use of textbooks/workbooks for assignments, and/or
computer software and other media. May be taken three times for credit.
Prerequisite: Placement into WR 80, RD 80, ESOL 250 or ESOL 252.

ALC 53. English Skills Lab - 3 credits. 3 Credits.
Provides an individualized plan of study to improve English grammar,
punctuation, writing, reading, and/or communication skills based on 90 hours
of study. Includes tutoring, use of textbooks/workbooks for assignments, and/or
computer software and other media. May be taken three times for credit.
Prerequisites: Placement into WR 80, RD 80, ESOL 250, or ESOL 252.

ALC 55. Basic Study Skills Lab. 0 Credits.
Self-paced, individualized study skills instruction in lab setting. Topics may
include note taking, time management, concentration and memory, reading
texts, test taking, self-advocacy and PCC resources.

ALC 56. Basic Study Skills Lab. 0.5 Credits.
Self-paced, individualized study skills instruction in lab setting. Topics may
include note taking, time management, concentration and memory, reading
texts, test taking, self-advocacy and PCC resources. Audit available.

ALC 50A. Math 60 Lab - 0 credits. 0 Credits.
Provides a review of individually chosen topics in Introductory Algebra-1st Term
(Math 60). Completion of this course does not meet prerequisite requirements
for other math courses.

ALC 50B. Math 60 Lab - 1 credit. 1 Credit.
Provides a review of individually chosen topics in Introductory Algebra-1st Term
(Math 60). Requires a minimum of 30 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 60C. Math 60 Lab - 2 credits. 2 Credits.
Provides a review of individually chosen topics in Introductory Algebra-1st Term
(Math 60). Requires a minimum of 60 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 60D. Math 60 Lab - 3 credits. 3 Credits.
Provides a review of individually chosen topics in Introductory Algebra I (Math
60). Requires a minimum of 90 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 60A. Math 60 Lab - 0 credits. 0 Credits.
Provides a review of individually chosen topics in Introductory Algebra-1st Term
(Math 60). Completes of this course does not meet prerequisite requirements
for other math courses.

ALC 60B. Math 60 Lab - 1 credit. 1 Credit.
Provides a review of individually chosen topics in Introductory Algebra-1st Term
(Math 60). Requires a minimum of 30 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 60C. Math 60 Lab - 2 credits. 2 Credits.
Provides a review of individually chosen topics in Introductory Algebra-1st Term
(Math 60). Requires a minimum of 60 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 60D. Math 60 Lab - 3 credits. 3 Credits.
Provides a review of individually chosen topics in Introductory Algebra I (Math
60). Requires a minimum of 90 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 65A. Math 65 Lab - 0 credits. 0 Credits.
Provides a review of individually chosen topics in Introductory Algebra-2nd Term
(Math 65). Completion of this course does not meet prerequisite requirements
for other math courses.

ALC 65B. Math 65 Lab - 1 credit. 1 Credit.
Provides a review of individually chosen topics in Introductory Algebra-2nd Term
(Math 65). Requires a minimum of 30 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 65C. Math 65 Lab - 2 credits. 2 Credits.
Provides a review of individually chosen topics in Introductory Algebra-2nd Term
(Math 65). Requires a minimum of 60 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 65D. Math 65 Lab - 3 credits. 3 Credits.
Provides a review of individually chosen topics in Introductory Algebra-2nd Term
(Math 65). Requires a minimum of 90 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 95A. Math 95 Lab - 0 credits. 0 Credits.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Completion of this course does not meet prerequisite requirements for other
math courses.

ALC 95B. Math 95 Lab - 1 credit. 1 Credit.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Requires a minimum of 30 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 95C. Math 95 Lab. 2 Credits.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Requires a minimum of 60 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 95D. Math 95 Lab - 3 credits. 3 Credits.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Requires a minimum of 90 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 95. Math 95 Lab - 0 credits. 0 Credits.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Completes of this course does not meet prerequisite requirements for other
math courses.

ALC 95B. Math 95 Lab - 1 credit. 1 Credit.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Requires a minimum of 30 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 95C. Math 95 Lab. 2 Credits.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Requires a minimum of 60 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

ALC 95D. Math 95 Lab - 3 credits. 3 Credits.
Provides a review of individually chosen topics in Intermediate Algebra (Math
95). Requires a minimum of 90 hours in the lab. Completion of this course
does not meet prerequisite requirements for other math courses.

AMERICAN SIGN LANGUAGE

ASL 101. First Year American Sign Language I. 4 Credits.
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. This course fulfills the following GE requirements:
Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.
ASL 102. First Year American Sign Language II. 4 Credits.
Continues work on 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. This course fulfills the following GE requirements:
Arts and Letters/AS, Arts and Letters/AIDS, Arts and Letters/AGS.

ASL 103. First Year American Sign Language III. 4 Credits.
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.
This course fulfills the following GE requirements: Arts and Letters/AS, Arts and
Letters/AIDS, Arts and Letters/AGS.

ASL 150. Accelerated American Sign Language, 6 Credits.
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. This course fulfills the following GE
requirements: Arts and Letters/AS, Arts and Letters/AIDS, Arts and Letters/AGS.

ASL 151. Accelerated American Sign Language, 6 Credits.
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. This course fulfills the
following GE requirements: Arts and Letters/AS, Arts and Letters/AIDS, Arts and Letters/AGS.

ASL 201. Second Year American Sign Language IV. 4 Credits.
First term of a three-term sequence that continues the work of first year
ASL. Reviews, expanding, and perfecting expressive skill, structure, and
vocabulary for the purpose of active communication. Proficiency target level:
Intermediate High. Sign Language Proficiency Interview may be required.
Prerequisite: ASL 101 or ASL 151. Prerequisite course must have been
completed within one year of class enrollment; and Sign Language Proficiency
Interview within one term.

ASL 202. Second Year American Sign Language V. 4 Credits.
Second term of a three-term sequence that continues the work of ASL 201.
Continues reviewing, expanding, and perfecting expressive skill, structure,
and vocabulary for the purpose of active communication. Proficiency target
level: Advanced Low. Sign Language Proficiency Interview may be required.
Prerequisite: ASL 201 or ASL 250. Prerequisite course must have been
completed with one year of class enrollment; Sign Language Proficiency
Interview within one term.

ASL 203. Second Year American Sign Language VI. 4 Credits.
Third term of a three-term sequence that continues the work of ASL 202.
Emphasizes active communication in ASL. Emphasizes ASL narratives, ASL
storytelling, and other topics. Proficiency target level: Advanced Mid. Sign
Language Proficiency Interview may be required. Prerequisite: ASL 202 or ASL 250.
Prerequisite course must have been completed within one year of class enrollment;
and Sign Language Proficiency Interview within one term.

ASL 210. American Sign Language Literature, 4 Credits.
Emphasizes skills for generation of ASL literature including: ASL narratives,
ASL storytelling, ASL poetry, ASL artistry, and other topics. Proficiency target
level: Advanced High. Sign Language Proficiency Interview may be required.
Prerequisite: ASL 201 or ASL 250. Prerequisite course must have been
completed within one year of class enrollment; and Sign Language Proficiency
Interview within one term.

ASL 240. History of the Deaf Community in America. 4 Credits.
Introduces pathological and cultural perspectives of Deaf people and their
community, Deaf history and organizations, Deaf people’s involvement in
and access to the arts, and perspectives on education. Covers services,
employment, legislation, special technology, communication systems
and attitudes toward languages and their impact on the Deaf community.
Introduces basic terminology and explains the difference between signers and interpreters.
Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.
This course fulfills the following GE requirements: Cultural Literacy, Arts
and Letters/AATOT, Arts and Letters/AS, Arts and Letters/AIDS, Arts and Letters/
AGS, Arts and Letters/ASOT-B.

ASL 250. Accelerated American Sign Language, 6 Credits.
First term of a two-term sequence that covers the material of ASL 201 and
half of ASL 202 to continue the work of first year ASL in an accelerated
format. Reviews, expanding, and perfecting expressive skill, structure, and
vocabulary for the purpose of active communication. Proficiency target level:
Intermediate High. Sign Language Proficiency Interview may be required.
Prerequisite course must have been completed within one year of class enrollment;
and Sign Language Proficiency Interview within one term.

ASL 251. Accelerated American Sign Language, 6 Credits.
Second term of a two-term sequence that covers the material of half of ASL
202 and ASL 203 to continue the work of ASL 250 in an accelerated format.
Emphasizes active communication in ASL. Emphasizes ASL narratives, ASL
storytelling, and other topics. Proficiency target level: Advanced Mid. Sign
Language Proficiency Interview may be required. Prerequisite: ASL 202 or ASL
250. Prerequisite course must have been completed within one year of class
enrollment; and Sign Language Proficiency Interview within one term.

ASL 260. Introduction to Interpreting, 3 Credits.
Introduces sign language interpreting as a profession. Includes the roles and
functions of interpreters; employment options; and an analysis of the demands
and rewards of the career path. Covers fundamental pre-interpreting skills
and reviews linguistic and grammatical principles and conventions, explores
strategies for developing ASL and English vocabulary and skills for effective
communication. Prerequisite: ASL 103 or ASL 151, or equivalent.

ASL 265. Fingerspelling and Numbers for ASL Students. 2 Credits.
Develops fundamental expressive and receptive fingerspelling skills for
the intermediate signer. Presents rules for ASL fingerspelling and number
production in context. Improves ability to comprehend fingerspelling. Develops
cloze skills (filling in missed letters by using contextual clues and background
knowledge), and continues development of letter and number production as
begun in core ASL courses. Prerequisites: ASL 201 or ASL 250.

ANTHROPOLOGY

ATH 101. Introduction to Physical Anthropology. 4 Credits.
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. Audit available. This course fulfills the
following GE requirements: Social Sciences/AATOT, Social Sciences/AS,
Social Sciences/AIDS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 102. Introduction to Archaeology and Prehistory. 4 Credits.
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 predate both new and old world civilizations. Prerequisites: WR 115, RD
115 and MTH 20 or equivalent placement test scores. Audit available. This
course fulfills the following GE requirements: Social Sciences/AATOT, Social
Sciences/AS, Social Sciences/AIDS, Social Sciences/AGS, Social Sciences/
ASOT-B.

ATH 103. Introduction to Cultural Anthropology. 4 Credits.
Examines modern human cultures. Analyzes a variety of ethnographic examples
from various world societies to understand the diverse aspects of language,
technology, economy, social structure, governance, religion, world views
and expressive aspects of life. Prerequisites: WR 115, RD 115 and MTH 20
or equivalent placement test scores. Audit available. This course fulfills the
following GE requirements: Social Sciences/AATOT, Social Sciences/AS,
Social Sciences/AIDS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 207. Cultural Anthropology: Culture Concepts. 4 Credits.
Examines different schools of anthropological thought and the concept of
culture from a historical perspective. Emphasis placed upon the importance
of culture in explaining similarities and differences in our evolving world system.
Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test
scores. Audit available. This course fulfills the following GE requirements:
Social Sciences/AATOT, Social Sciences/AS, Social Sciences/AIDS,
Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 208. Cultural Anthropology: Cultures of the World. 4 Credits.
Introduces ethnographic descriptions of a representative sample of the cultural
variations among contemporary peoples. Compares various subsistence
systems, and levels of socio-political integration. Prerequisites: WR 115, RD
115 and MTH 20 or equivalent placement test scores. Audit available. This
course fulfills the following GE requirements: Cultural Literacy, Social
Sciences/AATOT, Social Sciences/AS, Social Sciences/AIDS, Social Sciences/AGS,
Social Sciences/ASOT-B.
ATH 209. Cultural Anthropology: Cultural Growth & Change. 4 Credits.
Examines processes of cultural growth and change, the development of contemporary anthropological theory and the rapidly growing fields within applied anthropology. Ethnographic techniques presented so students may use them to examine the changing culture of our complex society. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/A, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 210. Selected Topics Ethnology:. 4 Credits.
Introduces life styles and interactions with their environments of peoples in a selected part of the world. Uses ethnographic and other information for concentrated study of the cultural diversity and environmental adaptations of those peoples. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/A, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 211. Selected Topics in Anthropology. 4 Credits.
Focuses on a specific anthropological topic and explores it in detail. Topics are drawn from the four sub-fields of anthropology and provide an in depth examination and analysis of the chosen subject. Topic specific theories and methods also highlighted. Audit available.

ATH 212. Introduction to Shamanism. 4 Credits.
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 psychotherapy will be explored. Prerequisite: WR 121 and MTH 20 or equivalent placement test scores, and ATH 103 or instructor permission. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 214. Human Environments: Ecological Aspects. 4 Credits.
Examines ecological relationships between human societies and their natural environments. Clarifies the human's biological relatedness to the world's natural ecosystems and then presents a look at the ensuing disruptions in nature and in human cultures. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 220. Native Americans of Oregon. 4 Credits.
Presents the history of anthropological research and the prehistory, languages and culture areas of Oregon's native peoples. Individual native groups are studied to better depict the life ways of Oregon's major cultural and geographic divisions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 221. Native Americans of the Northwest. 4 Credits.
An in-depth survey of the native peoples of Oregon, Washington, Alaska, and Southwest Canada. Individual native groups are studied to depict cultural variation within the region. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 222. Native North Americans. 4 Credits.
Surveys anthropology and distribution of the native North American peoples. Presents history of anthropological research and the prehistory, languages and culture areas of native North America. Specific native groups will be surveyed to better depict the life ways of the major cultural and geographic divisions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 230. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 231. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 232. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 233. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 234. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 235. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 238. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 239. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 240. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 241. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 242. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.

ATH 243. Survey of Prehistoric Mexico and Central America. 4 Credits.
Studies the development, form and history of pre-Columbian Indian civilizations, surveying the achievements of the Maya, the Aztec and their neighbors. Audit available.
MUP 292. Applied Music Miscellaneous. 1 Credit. 
Individual second-year participant in piano, voice and instruments of the band and orchestra. Prerequisites: MUP 171-172.

MUP 293. Applied Guitar. 1 Credit.

APPRENTICESHIP

APR 100. Exploring Trades & Apprenticeship. 1 Credit. 
Explores career opportunities within the Trades. Includes traditional careers and new opportunities in fields such as Renewable Energy and Sustainability. Introduces resources for assisting students in identifying skills needed to succeed in these fields. Audit available.

APR 101. LME: Electrical Theory Fundamentals. 3 Credits. 
Covers electrical theory and math for computing the values of voltage, amperage, resistance and power. Also covers various types of electrical circuits (series, parallel, combination) when applying Ohm’s Law. Introduces electrical safety, conductors, wires and their application as per the American Wire Gauge (AWG) Table. The principles of voltage drop, efficiency and cost of electrical energy will also be covered. Audit available.

APR 102. LME: DC Motors. 3 Credits. 
Covers the principles of magnets, magnetism and electromagnetism; AC/DC generators and the process of generating a voltage; DC motors and alternating current principles, including the components of an AC sine wave waveform. Electrical safety, principles of inductance, inductive reactance, capacitance and capacitive reactance, various types of capacitors, capacitor testing and their use in an industrial environment will also be discussed. Prerequisites: APR 101 or TE 9631. Audit available.

APR 103. LME: AC Motors & Transformers. 4 Credits. 
Covers the theory, construction, and application of transformers and three phase and single phase AC motors. Includes the theory and application of Delta wound and Wye wound motors and transformers. Includes Power Factor in electrical circuits, motor nameplate data, reading schematics, and electrical safety standards especially for Arc Blast and Arc Flash prevention and protection. Prerequisite: APR 102 or TE 9623. Audit available.

APR 104. LME: Luminaires & Equipment. 3 Credits. 
Introduces lighting fundamentals and their application in the industrial environment. Also covers fuses, receptacles, wiring methods, blueprints, batteries and some solid state components related to their use. Prerequisites: APR 103 or TE 9633. Audit available.

APR 121. Introduction to Electricity and Circuits. 3 Credits. 
Covers general atomic theory, electron flow in conductors, calculations of Ohms law when determining the values of voltage, current, resistance and power in series, parallel and combination electrical circuits. Covers sizing and the application of conductors and the concept of Voltage Drop in electrical circuits. Audit available.

APR 122. AC/DC Motors Principles. 3 Credits. 
Covers the basic principles of alternating current, direct current, and electromagnetism as applied to generators, and alternating current and direct current motors, including the concepts of inductance, inductive reactance, capacitors, capacitive reactance, and their effects upon alternating current circuits. Prerequisites: APR 121 or TE 9610. Audit available.

APR 123. AC Theory for Motors and Transformers. 4 Credits. 
Focusses on alternating current power distribution, transformers, motors, storage cells, solid state semiconductor devices, and Delta/Wye three phase motor winding connections as applied to the heavy industrial environment. Prerequisite: APR 122 Audit available.

APR 124. Electrical Systems Operations. 3 Credits. 
Covers alternating current measure instruments, test equipment, advanced motor theory, blueprint reading, electrical related materials, AC systems, advanced transformer theory, lighting, grounding and bonding, contactors, relays and general installation requirements to meet code specifications. Prerequisites: APR 123 or TE 9612. Audit available.

APR 125. Electrical Circuits and Wiring Methods. 3 Credits. 
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, lockout and appliances. Covers series, branch, and parallel circuits in detail, and the basic use of a multimeter to check for voltage, current, and resistance. Prerequisites: APR 124 or TE 9613. Audit available.

APR 126. Electrical Systems Installation per NEC. 3 Credits. 
Covers residential electrical systems, temporary electrical services, fire alarm systems, specialty systems, advanced controls, heat tracing, freezing protection, installation practices, and what constitutes a low voltage and limited energy circuit as per the NEC and the requirements for each. Prerequisites: APR 125 or TE 9614. Audit available.

APR 131. Refrigeration I, 2 Credits. 
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 ESSL 262); (RD 90 or ESSL 260). Audit available.

APR 132. Refrigeration II. 2 Credits. 
Covers and analyzes the operation of refrigeration system components. Includes compressors, condensers, evaporators, refrigerants and metering devices. Lab includes system components and compressor testing methods, focusing on charging, evacuation and recovery methods. APR 132 and FMT 102 cannot both be taken for credit. Prerequisites: APR 131 or FMT 101 or TE 9242. Audit available.

APR 133. Refrigeration III. 2 Credits. 
Covers the operation of refrigeration HVAC systems, emphasizing maintenance and controls. Lab includes troubleshooting systems along with evacuation and charging techniques. APR 133 and FMT 103 cannot both be taken for credit. Prerequisites: APR 132 or FMT 102 or TE 9243. Audit available.

APR 150. Pre-Apprenticeship Construction Training. 6 Credits. 
Introduces Evening Trades and Apprenticeship Program (ETAP) students to the environment of the commercial construction trades, including workplace safety, construction mathematics, blueprint reading and layout, foundations, wall layout and framing, and roof structures. Prerequisite: Department Permission required. Audit available.

APR 200. Trades Preparation. 8 Credits. 
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. Audit available.

APR 201. Electrical Motor Controls. 2 Credits. 
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 requirements. APR 201 and ELT 201 cannot both be taken for credit. Prerequisites: FMT 111 or APR 104 or Department Permission. Audit available.

APR 202. LME: Electrical Code Level I. 4 Credits. 
Provides a working knowledge of the NEC. Assists LME apprentices in preparing for the state electrical exam. Topics include definitions, requirements for electrical installations, identification and use of electrical conductors, wiring, circuit-protection, wiring methods, materials, and electrical safety standards. Prerequisites: APR 104 or TE 9634. Audit available.

APR 203. LME: Electrical Code - Level II. 4 Credits. 
Provides a working knowledge of the NEC. Topics include installation code requirements for the following: electrical equipment for general use such as motors, luminaries, air conditioners, cords, switchboards and panel boards. Also covers special occupancies which will assist students in locating and understanding electrical code requirements for hazardous locations such as gas stations, spray paint booths, aircraft hangars, health care facilities, places of assembly, theaters, manufactured buildings, mobile homes, temporary locations, etc. Electrical standards will be emphasized. Prerequisites: APR 202 or TE 9636. Audit available.

APR 204. LME: Electrical Code - Level III. 4 Credits. 
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. Audit available.
APR 221. Advanced AC Circuitry. 3 Credits.
Includes the theory of alternating current and power. Also includes alternating current, resistance in AC circuits, inductance and inductive reactance, capacitance and capacitive reactance, power factor correction, power in AC circuits, vector analysis and three phase connections and calculations. Prerequisites: APR 124 or TE 9615. Audit available.

APR 222. Hazardous Locations. 3 Credits.
Introduces the theory of hazardous locations, Class I, II, III installations, commercial garages-repair and storage, aircraft hangars, gasoline dispensing and service stations, bulk storage plants, finishing processes and health care facilities. Prerequisites: APR 221 or TE 9616. Audit available.

APR 223. Motor Control Operations including PLC's. 3 Credits.
Reviews basic motor controls and progresses to moderately complex machine controls. Includes fundamentals of motor control, control of motor starting, control components, programmable controllers, pilot devices, control circuit diagrams, solid state logic and diagrams, development of control circuits and troubleshooting electrical controls. Prerequisites: APR 222 or TE 9617. Audit available.

ARCH 100. Graphic Communication for Designers. 3 Credits.
Introduces CHIEF ARCHITECT software as a design and drafting tool, its applications to architecture, and covers creation, retrieval and modification of drawings. Prerequisite: ARCH 110. Audit available.

ARCH 102. Architectural Graphics. 2. 3 Credits.
Introduction to the design process and drawing for residential design focusing on design of a new single family residence. Prerequisite: ARCH 110. Audit available.

ARCH 109. Introduction to Architectural Drawing. 2 Credits.
Covers basic Architectural drawing skills including lettering, line quality, plans, elevations, sections and axonometric drawings. Audit available.

ARCH 111. Intro to Residential Construction Documents. 3 Credits.

ARCH 112. Intro to Commercial Construction Documents. 4 Credits.

ARCH 113. Site Planning. 2 Credits.
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. Audit available.

ARCH 121. Structural Systems I. 2 Credits.
An overview of residential structural systems, including identification of structural members, loads and load paths and reading structural framing plans. Prerequisite/concurrent: ARCH 124. Audit available.

ARCH 122. Structural Systems II. 3 Credits.
Covers the structuring of residential buildings including sizing of wood rafters, joists, beams, etc. Prerequisite: ARCH 121, MTH 60 or equivalent placement test scores. Audit available.

ARCH 123. Structural Systems III. 3 Credits.
Covers basic residential retaining walls, concrete foundations and residential prescriptive path solutions for wind and seismic loads. Prerequisite: ARCH 122, MTH 65 or equivalent placement test scores. Audit available.

ARCH 124. Introduction to Building Systems. 3 Credits.
An overview of residential building systems, including building construction, and heating, cooling, plumbing, electrical, and passive solar systems. Audit available.

ARCH 125. Introduction to AutoCAD. 3 Credits.
Introduces AutoCAD software as a design and drafting tool for architecture and interior design. Only one of ARCH 126, ID 125, or DRF 126 can be taken for credit. Audit available.

ARCH 126. Introduction to Google SketchUp. 3 Credits.
Introduces basic 3-D modeling terminology, concepts and tools used to create simple building models and useful everyday shapes using SketchUp 3-D modeling software. Audit available.

ARCH 131. Sustainable Building Strategies. 4 Credits.
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. Audit available.

ARCH 132. Residential Building Codes. 2 Credits.
Introduction to land use zoning and international residential building codes. Selected portions of the code will be discussed, with application to sample building plans. Prerequisite/concurrent: ARCH 124 or BCT 103. Audit available.

ARCH 133. Commercial Building Codes. 2 Credits.
Introduction to land use zoning and Oregon Building Codes for commercial buildings, using International Building Code. Selected portions of the code will be discussed, with application to sample buildings. Prerequisite/concurrent: ARCH 124 or BCT 103. Audit available.

ARCH 134. Energy Conservation Code. 2 Credits.
Provides an introduction to the Energy Conservation Code. Discusses selected portions of the code with application to sample buildings. Explores options for alternative materials and methods of code compliance. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

ARCH 136. Intermediate AutoCAD. 3 Credits.
In-depth study of computer-aided-drafting using AutoCAD software and its applications to architecture. Prerequisite: ARCH 126 or ID 125. Audit available.

ARCH 137. AutoCAD Architecture. 3 Credits.
Introduction to AutoCAD Architecture which offers a variety of tools not available in the base AutoCAD software, including 3D objects representing the most common architectural components such as walls, doors, windows, stairs and roofs. Prerequisite: ARCH 136 or DRF 136. Audit available.

ARCH 140. Introduction to CHIEF ARCHITECT. 3 Credits.
Introduces CHIEF ARCHITECT software as a design and drafting tool, its applications to architecture, and covers creation, retrieval and modification of drawings using basic commands. Course is also worth 60 LU credits to AIA members. Audit available.
ARCH 101. Understanding Architecture. 4 Credits.
Introduces aesthetic, historical, and critical issues of architecture. Presents aspects of drawing, painting, sculpture and craft in terms of experiencing, appreciating and understanding their roles in our lives. The series ART 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ARCH 115. Basic Design - Color Foundations. 3 Credits.
Introduces color foundations studio experience centered on creative problem solving. Develops perceptual awareness and understanding. Establishes critical skills and personal artistic vision. Investigates a broad range of materials, techniques and projects to explore black and white design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ARCH 116. Basic Design - Color Foundations. 3 Credits.
Introduces color foundations studio experience centered on creative problem solving. Develops perceptual awareness and understanding. Establishes critical skills and personal artistic vision. Investigates a broad range of materials, techniques and projects to explore color design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ARCH 117. Basic Design - 3D Foundations. 3 Credits.
Explores ways of seeing and creating work that acknowledges personal artistic intentions. Examines various 2-D, 3-D, and 4-D media and processes used to develop and encourage creative problem solving. Establishes critical skills necessary to evaluate art through critiques, discussions, and artistic presentation. Investigates artistic intent, aesthetic and structural solutions, and perceptual awareness. Recommended: an introduction to art, art history or a sense of curiosity and a willingness to experiment. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ART 140A. Digital Photography I. 3 Credits.
Introduces basic digital photography processes as it relates to creative arts, history, media and culture in both a historical and contemporary context. Includes critiques, discussions, and presentations to establish the basic skills necessary to evaluate prints and images, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. Requires access to a camera with manual exposure controls, DSLR (digital single-lens-reflex) cameras are preferred. This is the first course in a three-course sequence for first year digital photography. Prerequisite: ART 140 or ART 140A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 140B. Digital Photography I. 3 Credits.
Introduces intermediate basic digital photography processes as they relate to creative arts, history, media and culture in both a historical and contemporary context. Includes critiques, discussions, and presentations to establish the skills necessary to evaluate prints and images, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. Requires access to a camera with manual exposure controls, DSLR (digital single-lens-reflex) cameras are preferred. This is the second course in a three-course sequence for first year digital photography. Prerequisite: ART 140 or ART 140A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 140C. Digital Photography I. 3 Credits.
Introduces intermediate digital photography processes as they relate to creative arts, history, media and culture in both a historical and contemporary context. Includes critiques, discussions, and presentations to establish the skills necessary to evaluate prints and images, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. Requires access to a camera with manual exposure controls, DSLR (digital single-lens-reflex) cameras are preferred. This is the third course in a three-course sequence for first year digital photography. Prerequisite: Two terms of ART 140 or ART 140B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 142A. Introduction to B&W Photo (Darkroom). 3 Credits.
Introduces beginning black and white darkroom photographic processes, techniques and concepts. Addresses historical and contemporary issues specific to beginning photography. Develops photographic practices using black and white film (black and white film). Prerequisite: ART 140 or ART 142A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 142B. Intro to B&W Photo (Darkroom). 3 Credits.
Introduces intermediate black and white darkroom photographic processes, techniques and concepts. Addresses historical and contemporary issues specific to beginning photography. Develops photographic practices using black and white film (black and white film). Prerequisite: ART 140 or ART 142A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 142C. Introduction to B&W Photo (Darkroom). 3 Credits.
Introduces beginning black and white darkroom photographic processes, techniques and concepts. Addresses historical and contemporary issues specific to beginning photography. Develops photographic practices using black and white film (black and white film). Prerequisite: ART 140 or ART 142B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 143A. B&W Photography II (Darkroom). 3 Credits.
Covers advanced black and white darkroom techniques. Utilizes a broad range of advanced darkroom processes to further develop problem-solving skills and create prints. Includes critiques, discussion and presentations to establish more sophisticated skills to evaluate prints. Requires access to a camera, SLR (single-lens-reflex) camera with manual exposure controls. This is the first course of a three-course sequence for second year darkroom photography. Prerequisite: ART 142C or Instructor Approval. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 143B. B&W Photography II (Darkroom). 3 Credits.
Covers advanced darkroom techniques. Utilizes a broad range of advanced darkroom processes to further develop problem-solving skills and create prints. Includes critiques, discussion and presentations to establish more sophisticated skills to evaluate prints. Requires access to a camera, SLR (single-lens-reflex) or DSLR (digital single-lens-reflex) camera with manual exposure controls. This is the second course of a three-course sequence for second year darkroom photography. Prerequisite: Two terms of ART 143 or ART 143B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 143C. B&W Photography II (Darkroom). 3 Credits.
Covers advanced darkroom techniques. Utilizes a broad range of advanced darkroom processes to further develop problem-solving skills and create prints. Includes critiques, discussion and presentations to establish more sophisticated skills to evaluate prints. Requires access to a camera, SLR (single-lens-reflex) camera with manual exposure controls. This is the third course of a three-course sequence for second year darkroom photography. Prerequisite: Two terms of ART 143 or ART 143B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 181A. Painting I. 3 Credits.
Explores basic studio painting techniques, materials, and concepts while addressing historical and contemporary issues. Introduces a conceptual framework for critical analysis along with basic art theory. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 181B. Painting I. 3 Credits.
Introduces intermediate studio painting techniques, materials, and concepts while addressing historical and contemporary issues. Promotes a conceptual framework for critical analysis along with basic art theory. Prerequisites: ART 181 or ART 181A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 181C. Painting I. 3 Credits.
Elaborates on intermediate studio painting techniques, materials, and concepts while addressing historical and contemporary issues. Promotes a conceptual framework for critical analysis along with basic art theory. Prerequisites: Two terms of ART 181 or ART 181B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 197. Artist’s Skills/Practical Issues. 3 Credits.
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 FCC gallery, through internships, and/or through Service Learning Projects. Audit available.

ART 198. Special Topics in Art. 1-5 Credit.
A variable topics course offering special classes and workshops in art and in art history. Course affords novel opportunity to explore out-of-the-ordinary skills, themes, and subjects, including art travel. Audit available.

ART 204. History of Western Art. 4 Credits.
Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment of a particular era. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Paleolithic, Ancient Near Eastern, and Aegean cultures, beginning about 30,000 BC. Prerequisites: WR 115, E 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ART 204H. History of Western Art: Honors. 4 Credits.
This is the honors version. Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment of a particular era. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Paleolithic, Ancient Near Eastern, and Aegean cultures, beginning about 30,000 BCE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and 3.25 GPA. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/ASOT-B.

ART 205. History of Western Art. 4 Credits.
Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers Late Antiquity, Early Christian and Medieval periods, beginning about 500 BCE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 206. History of Western Art. 4 Credits.
Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Renaissance and Baroque periods, beginning about 1500 CE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and 3.25 GPA. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 206H. History of Western Art: Honors. 4 Credits.
This is the honors version. Examines visual art and architecture as a reflection of human interaction with the socio-political and physical environment. Focuses on viewing, analyzing and comparing many art forms in an historical context, and covers the Renaissance and Baroque periods, beginning about 1500 CE. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and 3.25 GPA. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 207. History of Asian Art. 4 Credits.
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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 208. History of Asian Art. 4 Credits.
Explores and 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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 209. History of Asian Art. 4 Credits.
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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 210. Women in Art. 4 Credits.
Covers the work of women artists from antiquity to the present. Examines works of the most important women artists from each period in relation to the changing roles of women in society and to the canon of art history. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 211. Modern Art History - 19th Century Art in Europe & America. 4 Credits.
Explores the beginning of the modern world and modern societies in Europe and the United States. Examines and analyzes the visual arts to reveal some effects of societal changes, and to gain insight into our modern world. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 212. Modern Art History - Early 20th Century Art. 4 Credits.
Explores early 20th century revolutions in science and technology, psychology and philosophy. Examines and analyzes the visual arts to reveal some effects of those changes, and to gain insight into our modern world. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 213. Modern Art History - Art Since 1945. 4 Credits.
Focuses attention on American art, as World War II ended the supremacy of Europe in the visual art world. Analyzes art since 1945 to explore the ideas behind it, to reveal our culture and values and to gain a greater understanding of contemporary art with its global perspective. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 214. History of Graphic Design. 4 Credits.
Explores the history of graphic design from the earliest communication technologies to the present, with a focus on the Modern era. Examines changes in style and technology within the field and considers the relationship between graphic design and its cultural, political and social contexts. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 215. History of American Residential Architecture. 3 Credits.
Examines the historical origins and elements of American house styles in order to develop insights into the residential architecture of our own era. Audit available.

ART 216. Introduction to the History of Photography. 4 Credits.
Traces the history of photography since its processes were first announced in 1839. Examines photographs as aesthetic objects, and as documents of history, scientific exploration and social change. Locates the medium and practice of photography within a broader social and artistic context. Explores photography within the fields of art, science and journalism viewing, analyzing and discussing ways in which the presence of the photograph has shaped our relationship to the world around us. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 217. Comics Art & Literature. 3 Credits.
Examines comics as a medium of visual narrative. Analyzes aesthetic qualities unique to comic books and graphic novels in artistic, historical, and literary contexts using seminal texts. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ART 218A. Calligraphy I - Roman Alphabet and Humanist Bookhand. 2 Credits.
Covers beginning practical and creative uses of calligraphy, lettering principles, techniques and functions. Includes the traditions and historical development of letters with a focus on the Roman alphabet and Humanist Bookhand. ART 218A, ART 218B and ART 218C may be taken in any order. Audit available.

ART 218B. Calligraphy I - Italic Alphabet. 2 Credits.
Covers beginning practical and creative uses of calligraphy, lettering principles, techniques and functions. Includes the traditions and historical development of letters with a focus on the Italic alphabet. ART 218A, ART 218B and ART 218C may be taken in any order. Audit available. 

ART 218C. Calligraphy I - Carolingian and Uncial Alphabets. 2 Credits.
Covers beginning practical and creative uses of calligraphy, lettering principles, techniques and functions. Includes the traditions and historical development of letters with a focus on the Carolingian and Uncial alphabets. ART 218A, ART 218B and ART 218C may be taken in any order. Audit available.
ART 220A. Advanced Calligraphy. 3 Credits.
Reviews the calligraphic scripts studied in the ART 218 sequence and refines the forms. Covers complex layout and design issues. Introduces beginning advanced techniques with the use of mixed media and working at a larger scale to develop personal aesthetic and vision. Includes creative problem-solving activities the professional calligrapher is likely to encounter on the job. Prerequisite: Three terms of ART 218 or ART 218C or instructor permission. Audit available.

ART 220B. Advanced Calligraphy. 2 Credits.
Continues the calligraphic scripts studied in the ART 218 sequence and refines the forms. Covers complex layout and design issues. Improves advanced techniques with the use of mixed media and working at a larger scale to develop personal aesthetic and vision. Includes creative problem-solving activities the professional calligrapher is likely to encounter on the job. Completion of ART220 once is equivalent to ART220A. Completion of ART220 twice is equivalent to ART220B. Completion of ART220 three times is equivalent to ART220C. Prerequisites: ART218A, ART218B and ART218C, or ART 218 or instructor permission. Audit available.

ART 220C. Advanced Calligraphy. 2 Credits.
Continues the calligraphic scripts studied in the ART 218 sequence and refines the forms. Covers complex layout and design issues. Improves advanced techniques with the use of mixed media and working at a larger scale to develop personal aesthetic and vision. Includes creative problem-solving activities the professional calligrapher is likely to encounter on the job. Completion of ART 220 once is equivalent to ART220A. Completion of ART 220 twice is equivalent to ART220B. Completion of ART 220 three times is equivalent to ART220C. Prerequisites: ART218A, ART218B and ART218C, or ART 218 or instructor permission. Audit available.

ART 231A. Drawing II. 3 Credits.
Deepens basic perceptual drawing techniques and tools as well as the understanding of the language of drawings in historical and contemporary contexts. Further develops critical skills for sighting, measuring, designing and constructing in drawing. This is the first course in a three-course sequence. Prerequisites: Three terms of ART 131 or ART131C or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AACOT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B. Audit available.

ART 231B. Drawing II. 3 Credits.
Further deepens basic perceptual drawing techniques and tools as well as the understanding of the language of drawings in historical and contemporary contexts. Further develops critical skills for sighting, measuring, designing and constructing in drawing. This is the second course in a three-course sequence. Prerequisites: ART 231 or ART231A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AACOT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B. Audit available.

ART 231C. Drawing II. 3 Credits.
Further deepens intermediate perceptual drawing techniques and tools as well as the understanding of the language of drawings in historical and contemporary contexts. Further develops critical skills for sighting, measuring, designing and constructing in drawing. This is the third course in a three-course sequence. Prerequisites: Two terms of ART 231 or ART 231B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AACOT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B. Audit available.

ART 237A. Life Drawing. 3 Credits.
Investigates drawing the human form through referencing professional models and applying various drawing processes and concepts. Develops understanding of the structure, form and proportions of the human figure in the context of composition, personal expression and an awareness of materials. Prerequisite: One term of ART237 or ART237A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AACOT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 237B. Life Drawing. 3 Credits.
Further investigates drawing the human form through referencing professional models and applying various drawing processes and concepts. Develops understanding of the structure, form and proportions of the human figure in the context of composition, personal expression and an awareness of materials. Prerequisite: One term of ART237 or ART237A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AACOT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 237C. Life Drawing. 3 Credits.
Further investigates drawing the human form through referencing professional models and applying various drawing processes and concepts. Develops intermediate understanding of the structure, form and proportions of the human figure in the context of composition, personal expression and an awareness of materials. Prerequisites: Two terms of ART 237 or ART 237B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AACOT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 240A. Digital Photography II. 3 Credits.
Explores the boundaries of digital photography to include a more personal practice while placing work within a historical, social and cultural context. Introduces critical skills necessary to expand perceptual and visual cultural awareness by using a broad range of advanced digital processes and concepts. Introduces the ideas related to the development of a professional photographic practice. Requires access to a camera with manual exposure controls. DSLR (digital single-lens-reflex) cameras are preferred. This is the third course in a three-course sequence for second year digital photography. Prerequisite: Three terms of ART 140 or ART 140C or instructor permission. Audit available.

ART 240B. Digital Photography III. 3 Credits.
Explores the boundaries of digital photography to include a more personal practice while placing work within a historical, social and cultural context. Develops the critical skills necessary to expand perceptual and visual cultural awareness by using a broad range of advanced digital processes and concepts. Encourages further development of a professional photographic practice. Requires access to a camera with manual exposure controls. DSLR (digital single-lens-reflex) cameras are preferred. This is the second course in a three-course sequence for second year digital photography. Prerequisite: One term of ART 240 or ART 240A or instructor permission. Audit available.

ART 240C. Digital Photography IV. 3 Credits.
Explores the boundaries of advanced digital photography to cultivate a personal practice while placing work within a historical, social and cultural context. Explores the critical skills necessary to expand perceptual and visual cultural awareness by using a broad range of advanced digital processes and concepts. Encourages further development of a professional-level photographic practice. Requires access to a camera with manual exposure controls. DSLR (digital single-lens-reflex) cameras are preferred. This is the third course in a three-course sequence for second year digital photography. Prerequisite: Two terms of ART240 or ART240B or instructor permission. Audit available.

ART 243. The Photographic Portfolio. 3 Credits.
Develops a strong artistic vision through creating a professional portfolio. Explores the boundaries of advanced digital photography to begin to include a more personal practice while placing work within a historical, social and cultural context. Explores the critical skills necessary to expand perceptual and visual cultural awareness by using a broad range of advanced digital processes and concepts. Encourages further development of a professional-level photographic practice. Requires access to a camera with manual exposure controls. DSLR (digital single-lens-reflex) cameras are preferred. This is the third course in a three-course sequence for second year digital photography. Prerequisite: Two terms of ART240 or ART240B or instructor permission. Audit available.
ART 248C. Glass Casting. 3 Credits.
Introduces advancedbeginning level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develops a beginning level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the third course of a three-course sequence. Prerequisite: Two terms of ART 253 or ART 253B or instructor permission. Audit available.

ART 253A. Ceramics I. 3 Credits.
Introduces beginning ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develops a beginning level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the first course of a three-course sequence. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 253B. Ceramics I. 3 Credits.
Introduces beginning intermediate level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develop a beginning intermediate level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the second course of a three-course sequence for first year ceramics. Prerequisites: One term of ART 253 or ART 253A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 253C. Ceramics I. 3 Credits.
Introduces intermediate level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develop an intermediate level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to exercise critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Employs creative problem solving through investigating a variety of strategies. This is the third course of a three-course sequence for first year ceramics. Prerequisite: Two terms of ART 253 or ART 253B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 256A. Ceramics II. 3 Credits.
Introduces lower-advanced level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develop a lower-advanced level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. This is the first course of a three-course sequence. Prerequisite: 3 terms of ART 253 or ART 253C or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 256B. Ceramics II. 3 Credits.
Introduces middle-advanced level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develop a middle-advanced level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. This is the second course of a three-course sequence. Prerequisite: ART 256 or ART 256A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 256C. Ceramics II. 3 Credits.
Introduces advanced level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develop an advanced level of creative problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate ceramic works, explore artistic intent, examine aesthetic and structural solutions and expand perceptual awareness. This is the third course of a three-course sequence. Prerequisite: Two terms of ART 256 or ART 256B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 270A. Printmaking I. 3 Credits.
Introduces basic printmaking processes, techniques, and concepts while addressing historical and contemporary issues. Develops an introductory level of critical problem solving and kinetic skills with clay forming and finishing techniques, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate glass works, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the first course of a three-course sequence. Prerequisite: Two terms of ART 270 or ART 270A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 270B. Printmaking II. 3 Credits.
Introduces intermediate beginning printmaking processes, techniques, and concepts while addressing historical and contemporary issues. Includes terminology of monoprints, relief and intaglio processes. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate glass prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Employs creative problem solving by employing a variety of strategies. This is the second course of a three-course sequence for first year printmaking. Prerequisites: ART 270 or ART 270A or instructor permission. Recommended: ART 115, 116 and 131A. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 270C. Printmaking III. 3 Credits.
Explores intermediate printmaking techniques, processes, and concepts while addressing historical and contemporary issues. Includes terminology of monoprints, relief and intaglio processes. Includes critiques, discussions, and presentations to exercise critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Employs creative problem solving through implementing a variety of strategies. This is the third course of a three-course sequence for first year printmaking. Prerequisites: Two terms of ART 270 or ART 270B or instructor permission. Recommended: ART 115, 116 and 131A. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 271A. Printmaking I. 3 Credits.
Introduces beginning advanced printmaking techniques (e.g. sugar lift, color, glazes) and other intaglio processes (e.g. folio sets and books) while addressing historical and contemporary issues. Develops creative problem solving by utilizing monotypes, color relief, and advanced intaglio processes to create a print. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Promotes creative problem solving by employing a variety of strategies. This is the third course of a three-course sequence. Prerequisite: Three terms of ART 270 or ART 270C or instructor permission. Recommended: ART 115, ART 116 and ART 131A. Audit available.

ART 271B. Printmaking II. 3 Credits.
Explores intermediate advanced printmaking techniques (e.g. sugar lift, color, glazes) and complete a variety of projects (e.g. folio sets and books) while addressing historical and contemporary issues. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the first course of a three-course sequence. Prerequisite: Two terms of ART 271 or ART 271A or instructor permission. Recommended: ART 115, 116 and 131A. Audit available.

ART 271C. Printmaking III. 3 Credits.
Further explores advanced printmaking techniques (e.g. sugar lift, color, glazes) and complete a variety of projects (e.g. folio sets and books) while addressing historical and contemporary issues. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Prerequisites: Two terms of ART 271 or ART 271B or instructor permission. Recommended: ART 115, 116 and 131A. Audit available.
ART 277A. Life Painting. 3 Credits.
Examines the human form through the study and painting of live professional models. Applies various painting techniques and concepts as students learn the structure, form and proportions of the human figure. Emphasizes personal artistic development with attention to compositional organization. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 277B. Life Painting. 3 Credits.
Examines the human form through the study and painting of live professional models. Applies various painting techniques and concepts as students learn the structure, form and proportions of the human figure. Emphasizes personal artistic development with attention to compositional organization. Prerequisites: One term of ART 277 or ART 277A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 277C. Life Painting. 3 Credits.
Examines the human form through the study and painting of live professional models. Applies more advanced painting techniques and concepts as students learn the structure, form and proportions of the human figure. Emphasizes personal artistic development with attention to compositional organization. Prerequisites: Two terms of ART 277 or ART 277B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 279A. Experimental Media. 3 Credits.
Begins ways of seeing and creating work that acknowledges personal artistic intentions. Examines various 2-D, 3-D, and 4-D media and processes used to develop and encourage creative problem solving. Establishes critical skills necessary to evaluate art through critiques, discussions, and artistic presentation. Investigates artistic intent, aesthetic and structural solutions, and perceptual awareness. Recommended: an introduction to art, art history, or a sense of curiosity and a willingness to experiment. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 279B. Experimental Media. 3 Credits.
Expands intermediate ways of seeing and creating work that acknowledges personal artistic intentions. Examines various 2-D, 3-D, and 4-D media and processes used to develop and encourage creative problem solving. Establishes critical skills necessary to evaluate art through critiques, discussions, and artistic presentation. Develops artistic intent, aesthetic and structural solutions, and perceptual awareness. Recommended: an introduction to art, art history, or a sense of curiosity and a willingness to experiment. Prerequisites: ART 279 or ART 279A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 279C. Experimental Media. 3 Credits.
Advances ways of seeing and creating work that acknowledges personal artistic intentions. Examines various 2-D, 3-D, and 4-D media and processes used to develop and encourage creative problem solving. Establishes critical skills necessary to evaluate art through critiques, discussions, and artistic presentation. Employs artistic intent, aesthetic and structural solutions, and perceptual awareness. Recommended: an introduction to art, art history or a sense of curiosity and a willingness to experiment. Prerequisites: Two terms of ART 279 or ART 279B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 281A. Painting II. 3 Credits.
Explores ways of seeing and elaborates on intermediate painting techniques, materials, and concepts while relating to historical and contemporary issues. Presents a conceptual framework for critical analysis along with basic art theory. Prerequisites: Three terms of ART 181 or ART 181C or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 281B. Painting II. 3 Credits.
Explores ways of seeing and elaborates on intermediate painting techniques, materials, and concepts while relating to historical and contemporary issues. Presents a conceptual framework for critical analysis along with basic art theory. Prerequisites: One term of ART 281 or ART 281A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 281C. Painting II. 3 Credits.
Explores ways of seeing and elaborates on intermediate painting techniques, materials, and concepts while relating to historical and contemporary issues. Presents a conceptual framework for critical analysis along with basic art theory. Prerequisites: Two terms of ART 281 or ART 281B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 284A. Water Media I. 3 Credits.
Explores basic studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with basic art theory. Recommended: ART 131. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 284B. Water Media I. 3 Credits.
Explores basic studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with basic art theory. Recommended: ART 131. Prerequisites: One term of ART 284 or ART 284A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 284C. Water Media I. 3 Credits.
Explores basic studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with basic art theory. Recommended: ART 131. Prerequisites: Two terms of ART 284 or ART 284B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 287A. Water Media II. 3 Credits.
Explores intermediate and more advanced studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with advanced art theory. Prerequisite: Three terms of ART 284 or ART 284C or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 287B. Water Media II. 3 Credits.
Explores intermediate and more advanced studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with advanced art theory. Prerequisite: One term of ART 287 or ART 287A or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 287C. Water Media II. 3 Credits.
Explores intermediate and more advanced studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a further understood conceptual framework for critical analysis along with advanced art theory. Prerequisite: Two terms of ART 287 or ART 287B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 290A. Sculpture: Plaster/Clay. 3 Credits.
Introduces basic sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with advanced art theory. Prerequisite: Two terms of ART 287 or ART 287B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ART 290A. Sculpture: Carving. 3 Credits.
Introduces basic sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the first of a three-course sequence. Prerequisites: Two terms of ART 290 or ART 290B or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 290B. Sculpture: Mixed Media. 3 Credits.
Introduces intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops intermediate level techniques for clay and plaster (including but not limited to: mold making, casting, and direct construction over armatures). Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second of a three-course sequence. Prerequisites: ART 290 or ART 290A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 290C. Sculpture: Plaster/Clay. 3 Credits.
Explores intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops intermediate level techniques for clay and plaster (including but not limited to: mold making, casting, and direct construction over armatures). Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second of a three-course sequence. Prerequisites: Two terms of ART 290 or ART 290B or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 291A. Sculpture: Carving. 3 Credits.
Introduces basic sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops an introductory level of creative problem solving through making sculpture. Introduces critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second in a three-course sequence. Prerequisites: Two terms of ART 291 or ART 291A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 291B. Sculpture: Carving. 3 Credits.
Introduces intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops an introductory level of creative problem solving through making sculpture. Develops critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the third in a three-course sequence. Prerequisites: Two terms of ART 291 or ART 291A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 291C. Sculpture: Carving. 3 Credits.
Explores intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops creative problem solving through making sculpture. Employs intermediate level techniques associated with the reductive process of carving to make sculpture. Introduces critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the third in a three-course sequence. Prerequisites: One term of ART 291 or ART 291A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 292A. Sculpture: Mixed Media. 3 Credits.
Introduces basic sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops an introductory level of creative problem solving through making sculpture using a variety of mixed media techniques. Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the first of a three-course sequence. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 292B. Sculpture: Mixed Media. 3 Credits.
Introduces intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops a beginning intermediate level of creative problem solving through making sculpture using some intermediate level mixed media techniques. Develops critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second of a three-course sequence. Prerequisites: One term of ART 292 or ART 292A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 292C. Sculpture: Mixed Media. 3 Credits.
Explores intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues in sculpture. Develops creative problem solving through making sculpture. Employs intermediate level mixed media techniques. Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the third of a three-course sequence. Prerequisites: Two terms of ART 292 or ART 292B or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 293A. Figure Sculpture. 3 Credits.
Introduces basic sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues relating to figure sculpture. Develops introductory level of creative problem solving through making figurative sculpture based on the study of the human form from professional models, nude and clothed. Applies various sculpting techniques and concepts to the study of the structure, form, and proportions of the human figure. Introduces critical skills necessary to evaluate figure sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the first of a three-course sequence. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 293B. Figure Sculpture. 3 Credits.
Introduces intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues relating to figure sculpture. Develops creative problem solving through making figurative sculpture based on the study of the human form from professional models, nude and clothed. Introduces some intermediate level sculpting techniques and concepts to the study of the form, and proportions of the human figure. Develops critical skills necessary to evaluate figure sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second of a three-course sequence. Recommended: One term of ART 293 or ART 293A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 293C. Figure Sculpture. 3 Credits.
Explores intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues relating to figure sculpture. Develops intermediate level creative problem solving through making figurative sculpture based on the study of the human form from professional models, nude and clothed. Employs intermediate sculpting techniques and concepts to the study of the structure, form, and proportions of the human figure. Establishes critical skills necessary to evaluate figure sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the third of a three-course sequence. Prerequisites: Two terms of ART 293 or ART 293B or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ART 294A. Sculpture: Metals. 3 Credits.
Introduces basic sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues. Develops an introductory level of creative problem solving through making sculptures with various metal working techniques (including but not limited to: welding, cold connections, forming and finishing). Introduces critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the first of a three-course sequence. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, and Arts and Letters/ASOT-B.

ART 294B. Sculpture: Metals. 3 Credits.
Introduces intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues. Develops creative problem solving through making sculpture. Introduces some intermediate metal working techniques (including but not limited to: welding, cold connections, forming and finishing). Develops critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second of a three-course sequence. Prerequisites: One term of ART 294 or ART 294A or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, and Arts and Letters/ASOT-B.

ART 294C. Sculpture: Metals. 3 Credits.
Explores intermediate sculptural form, processes, techniques, and concepts while addressing historical and contemporary issues. Develops creative problem solving through making sculpture. Employs intermediate level metal working techniques (including but not limited to: welding, cold connections, forming and finishing). Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and sculpture presentations by exploring artistic intent, examining aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the third of a three-course sequence. Prerequisites: Two terms of ART 294 or ART 294B or instructor permission. Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, and Arts and Letters/ASOT-B.

AUTO REPAIR COLLISION TECH
AB 100. Auto Body Basic Skills. 12 Credits.
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. Audit available.

AB 105. Frame Analysis & Repair. 12 Credits.
Covers structural misalignment analysis, use of measuring systems, structural repair procedures, and wheel alignment. Prerequisites: AB 100. Audit available.

AB 106. Panel Repair. 12 Credits.
Develops skills in repair of practice panels, school owned vehicles, and customer cars. Safe use of grinders, sanders, assorted hand tools, and pulling equipment will be applied and practiced. Paint fundamentals, preparation, and application will be discussed. Prerequisites: AB 100. Audit available.

AB 116. Auto Painting I. 12 Credits.
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. Audit available.

AB 117. Auto Painting II. 12 Credits.
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. Audit available.

AB 118. Auto Painting III. 12 Credits.
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. Audit available.

AB 201. Panel Replacement. 12 Credits.
Covers replacing new 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. Prerequisites: AB 100, AB 105, and AB 106. Audit available.

AB 205. Technical Skills and Collision Repair. 12 Credits.
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. Audit available.

AB 280A. Cooperative Education: Auto Body Repair. 1-10 Credit.
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. Prerequisites: AB 205.

AB 280B. Cooperative Education: Auto Body Repair - Seminar. 1-2 Credit.
Provides opportunity to share work experiences and receive feedback from students and instructors. Corequisite: AB 290A.

AUTOMOTIVE SERVICE TECHNOLOGY
AM 100. Intro to Automotive Systems. 4 Credits.
Introduces automotive tools, fasteners, precision measurement, service information systems/manuals and shop procedures. Perform basic automotive service, inspection, and measuring procedures including the practical application of mathematics for the automotive trade. Audit available.

AM 111. Engine Repair. 4 Credits.
Covers purpose, inspection and repair of engine components including disassembly and reassembly of school owned engines to gain experience in hand tool use and proper engine repair and evaluation procedures. Prerequisites: CG 209. Audit available.

AM 121. Drive Train Systems II. 4 Credits.
Introduces automatic transmissions/transaxles, the study of power flow and diagnosis of automatic transmission mechanical and hydraulic systems. Includes proper rebuild procedures, component identification and dynamometer testing of a student built automatic transmission. Prerequisite: CG 209. Audit available.

AM 131. Drive Train Systems I. 4 Credits.
Introduces manual transmissions/transaxles, the study of power flow and diagnosis of manual transmission systems. Includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Prerequisite: CG 209. Audit available.

AM 132. Drive Train Systems III. 4 Credits.
Introduces work on approved customer vehicles diagnosing and servicing automatic and manual drive train customer concerns. Provides a realistic experience and develops an understanding of procedures, which take place daily in an automotive repair facility. Prerequisite: CG 209. Audit available.

AM 141. Undercar Systems I. 4 Credits.
Continues development of skills learned in Undercar I. Introduces basic principles of steering, suspension and wheel alignment for passenger cars and light duty trucks including tire construction, types and sizing. Includes practicing disassembly and re-assembly of steering and suspension system components. Introduces computerized 4-wheel-alignment, tire balancing and tire changing equipment. Prerequisite: CG 209. Audit available.

AM 142. Undercar Systems III. 4 Credits.
Covers diagnosis and repair of steering system service, suspension system service and 4-wheel alignments in a laboratory/shop setting. Includes how to perform complete steering and suspension system inspections and determine what repairs are needed, order parts and complete repairs under close instructor supervision. Vehicles serviced are drawn from a pool of customer or school owned vehicles. Prerequisite: CG 209. Audit available.

AM 151. Undercar Systems I. 4 Credits.
Introduces principles of automotive braking systems. Includes practicing disassembly/assembly of brake system components using school owned equipment including proper measuring and machining of brake drums and discs. Prerequisite: CG 209. Audit available.

AM 161. Electrical Systems I. 4 Credits.
Introduces electrical theory, schematic symbols, battery and starter theory, operation, diagnosis and repair. Lecture and lab work includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.

AM 162. Electrical Systems II. 4 Credits.
A continuation of reading schematics, starting and charging system theory, operation, diagnosis and repair. Lecture and lab work includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.
AM 163. Electrical Systems III. 4 Credits.
Introduces customer work on approved automobiles including diagnosis of electrical problems, reading of schematics, use of test equipment, satisfactory completion of wire connections, testing, repair, and/or replacement of electrical units. Prerequisite: CG 209. Audit available.

AM 171. Heating & Air Conditioning Systems. 4 Credits.
Introduces theory, operation and repair of automotive heating and air conditioning systems. Includes the testing and repair of HVAC control systems on approved customer automobiles. Prerequisite: CG 209. Audit available.

AM 181. Engine Performance I. 4 Credits.
Introduces the use of automotive scan tools, lab scopes and electronic test equipment. Covers the operation and testing of electronic ignition systems including EI, DI and related components. Prerequisite: CG 209. Audit available.

AM 182. Engine Performance II. 4 Credits.
Introduces the causes of air pollution and climate change, the use of the five gas analyzer, catalytic converters, crankcase ventilation systems, evaporative control systems and federal and state emission control laws. Prerequisite: CG 209. Audit available.

AM 183. Engine Performance III. 4 Credits.
Introduces the operation, service and testing of fuel management systems, on board diagnostics and idle control systems. Includes diagnostic of failed fuel management systems. Prerequisite: CG 209. Audit available.

AM 201. Auto Shop Lab I. 4 Credits.
Includes automotive service work in a live shop setting. Emphasizes advanced engine performance theory and practice. This is a capstone course and the first class in a three course sequence. This class may be repeated one time for credit. Prerequisite: CG 209. Audit available.

AM 202. Auto Shop Lab II. 4 Credits.
Includes automotive service work in a live shop setting. Emphasizes advanced engine performance theory and practice. This is a capstone course and the second class in a three course sequence. This class may be repeated one time for credit. Prerequisite: CG 209. Audit available.

AM 203. Auto Shop Lab III. 4 Credits.
Includes automotive service work in a live shop setting. Emphasizes advanced engine performance theory and practice. This is a capstone course and the third class in a three course sequence. This class may be repeated one time for credit. Prerequisite: CG 209. Audit available.

AM 280A. Cooperative Education: Automotive Service. 1-12 Credit.
Includes automotive service work in a live shop setting performing diagnostic and repair work under the supervision of an automotive technician. Emphasizes independent learning and workplace skills with limited instruction. Requires work mastered at an automotive repair facility. May be taken three times for credit. Department permission required. Prerequisite: CG 209.

AVIATION MAINTENANCE TECH
AMT 101. Introduction to Aviation Maintenance Technology. 1 Credit.
Covers aviation maintenance technology careers, including program admission and completion requirements, continuing training and certification requirements, general industry safety standards, and career opportunities within the aviation maintenance industry. This course is a prerequisite for all other AMT courses.

AMT 102. Aircraft Electricity I. 4 Credits.
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 and MTH 60 or with AMT Department Chair permission, the department Math test with 70% or higher. Audit available.

AMT 105. Aviation CFRs and Related Subjects. 4 Credits.
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 with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 106. Aircraft Applied Science. 4 Credits.
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 and MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 107. Materials & Processes. 4 Credits.
Covers several general 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 and MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 108. AMT Practicum/General. 2 Credits.
Provides further development of students' skills through practical application before graduation from the FAA-approved Airframe or Powerplant curriculum. This course is used as a comprehensive tool to evaluate student strengths and weaknesses. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106, AMT 107, and MTH 60 or Department Math test with a 70% or higher. Audit available.

AMT 109. Assembly & Rigging. 4 Credits.
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 102, AMT 203, AMT 204, AMT 105, AMT 106, AMT 107. Audit available.

AMT 115. Aircraft Structures & Inspection. 4 Credits.
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 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 117. Reciprocating Engine Theory & Maintenance. 4 Credits.
Covers aircraft reciprocating engine theory and various maintenance procedures and techniques. Includes the use of manufacturer's publications. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105 and AMT 107. Audit available.

AMT 120. Propellers and Engine Installation. 4 Credits.
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 102, AMT 203, AMT 204, AMT 105, AMT 106, AMT 107. Audit available.

AMT 121. Turbine Engine Theory and Maintenance. 4 Credits.
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 102, AMT 203, AMT 204, AMT 105, AMT 106, AMT 107. Audit available.

AMT 123. Ignition Systems. 4 Credits.
Covers reciprocating and turbine engine ignition system theory and overhaul practices, plus the relationships of the complete ignition system to the engine and its operation. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 124. Fuel Metering Systems. 4 Credits.
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 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 203. Aircraft Electricity II. 4 Credits.
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 and MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 204. Aircraft Electricity III. 4 Credits.
Presents basic electronic theory; 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 and MTH 60 or with AMT Department Chair permission, the AMT Department Math test with a 70% or higher. Audit available.

AMT 208. Aircraft Systems. 4 Credits.
Examines various airframe systems. Includes ice and rain, cabin atmosphere, position and warning, and fire protection. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106, AMT 107. Audit available.
COURSES

AMT 211. Composite Structures, 4 Credits.
Covers modern bonded structures such as honeycomb and laminated components. Includes discussion of inspection and limited repairs to wood structures. Examines methods of removing finishes, corrosion proofing and painting aircraft and aircraft components. Includes inspection and recovering operations for fabric covered aircraft. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106, and AMT 107. Audit available.

AMT 212. Sheet Metal, 4 Credits.
Covers methods for sheet metal repairs to aircraft and methods of forming repair parts for damaged aircraft. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 213. Hydraulics, Pneumatics and Landing Gear, 4 Credits.
Covers inspection and repair of aircraft landing gear and hydraulic system components. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 214. Instruments, Communication & Navigation Systems, 4 Credits.
Presents basic functions, internal workings and maintenance procedures for instruments, communication, navigation and autopilot systems used on complex, modern aircraft. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106, and AMT 107. Audit available.

AMT 216. AMT Practicum/Airframe, 2 Credits.
Provides further development of students' skills through practical application before graduating from the FAA-approved Airframe curriculum. This course is used as a comprehensive tool to evaluate student strengths and weaknesses. Prerequisite: AMT 108. Prerequisite/concurrent: AMT 208, AMT 109, AMT 211, AMT 212, AMT 213, AMT 214, AMT 115, WLD 210. Audit available.

AMT 218. Powerplant Inspection, 4 Credits.
Covers proper inspection of the entire engine installation, including exhaust systems, engine instrumentation, lubrication systems and control systems. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 219. Turbo Engine Overhaul, 4 Credits.
Covers removing, disassembling, cleaning, inspecting, reassembling and reinstalling a turbine engine. Emphasizes engine manufacturer's publications. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 222. Reciprocating Engine Overhaul, 4 Credits.
Covers machining and overhaul processes for reciprocating engines. Prerequisites: AMT 102, AMT 203, AMT 204, AMT 105, AMT 106 and AMT 107. Audit available.

AMT 225. AMT Practicum/Powerplant, 2 Credits.
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 109. Prerequisite/concurrent: AMT 117, AMT 219, AMT 120, AMT 121, AMT 222, AMT 123, AMT 124. Audit available.

AMT 228. A&P Shop Practice, 1-4 Credits.
Some students feel the need for more shop experience in areas of choice. When it is within the practical capabilities of the department to offer that experience, the student may take one or more shop practice modules. The module may, under some circumstances, be substituted for the A&P Make-up course. Completion of most of the required A&P courses is desirable. Audit available.

AVIATION SCIENCE

AVS 107. Flight Preparation Lab Level 1, 1 Credit.
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 Credits.
Covers fundamentals of flight, helicopter systems, aeronautical publications, Federal Aviation Regulations, navigation, flight planning, radio procedures and weather. Presents sufficient knowledge to prepare for the FAA Private Pilot knowledge test. Audit available.

AVS 115. Helicopter Private Pilot Flight, 5 Credits.
Covers the operation of helicopters. Explores fundamentals of flight, emergency procedures, air traffic control and operational procedures. Provides the flight and ground instruction required to qualify to take the FAA Private Pilot Rotorcraft Helicopter knowledge and practical tests. Flight training fees apply and cover a specific amount of training. Additional funds may be required. Corequisite: AVS 107. Prerequisite/concurrent: AVS 127. Prerequisites: Placement into MTH 65 and WR 121.

AVS 120. Airplane: Private Pilot Ground School, 4 Credits.
Covers fundamentals of flight, aeronautical publications, Federal Aviation Regulations, navigation, flight planning, radio procedures and weather. Presents sufficient knowledge to prepare for the FAA Private Pilot knowledge test. Open to the general public. Audit available.

AVS 125. Airplane: Private Pilot Flight, 5 Credits.
Covers operation of single-engine airplanes as it applies to FAA certified Private Pilot operations. Explores fundamentals of flight, air traffic control, operational procedures and aeronautical decision making. Provides the required ground and flight instruction and experience in preparation for FAA knowledge and practical tests. Flight training fees cover a specific amount of training; additional fees may be required. Corequisite: AVS-107. Prerequisite/concurrent: AVS-127. Prerequisites: Placement into MTH 65 and WR 121 or higher.

AVS 127. Introduction to Aviation, 4 Credits.
Examines the aviation industry from early flight to future potentials. Introduces the career opportunities in a variety of fields of aviation, with focus on professional airplane or helicopter pilot careers. Provides a general overview of pilot flight training including certificates, ratings and training aircraft used. Open to the general public. Audit available.

AVS 130. Instrument Ground School, 4 Credits.
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. FOC Course not recommended without prior flight experience. Prerequisite: AVS 120. Audit available.

AVS 135. Airplane: Instrument Flight, 4 Credits.
Receive training in instrument flight operations including basic attitude instrument skills, radio navigation, departure and approach procedures and instrument cross-country planning and flying. Provides required flight and ground instruction in preparation for the FAA Instrument Rating – Airframe knowledge and practical tests. Flight training fees apply and cover a specific amount of training; additional fees may be required. Prerequisite: AVS 125. Corequisite: AVS 107.

AVS 137. Applied Aerodynamics, 4 Credits.
Introduces aerodynamics. Explores various concepts and theories relevant to modern aviation. Audit available.

AVS 140. Airplane: Commercial Pilot Ground, 4 Credits.
Covers advanced concepts of flight maneuvers, Federal Aviation Regulations, weight and balance, and other aeronautical skill topics. Presents sufficient knowledge to prepare for the FAA Commercial pilot knowledge test. Prerequisite: AVS 130. Audit available.

AVS 145. Introduction to Commercial Airplane, 4 Credits.
Introduces commercial pilot training activities and includes cross-country flight operations and a review of previous items learned during private and instrument pilot training. Explores how to plan and execute a cross-country flight as a commercial pilot. Provides ground training required to take the FAA Commercial Airplane knowledge test. Flight training fees apply and cover a specific amount of training; additional funds may be required. Prerequisite: AVS 135. Corequisite: AVS 107.

AVS 150. Helicopter: Commercial Ground, 3 Credits.
In depth study of aerodynamics systems, performance, aeronautical charts, regulations, and flight maneuvers all relating specifically to helicopters. Presents sufficient knowledge to prepare for the FAA Commercial Pilot Rotorcraft helicopter written test. Audit available.

AVS 156. Helicopter Basic Commercial w/Instrument, 5 Credits.
Introduces commercial pilot training activities and training for the Instrument rating. Includes cross-country flight procedures, emergency procedures and procedures for flight by reference to instruments as well as training in basic commercial maneuvers. Students must hold a private pilot certificate prior to enrollment. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 115. Coreq: AVS 107 and AVS 130.

AVS 157. Aircraft Systems & Structures I: Airframe, 3 Credits.
Designed to give students the background in aircraft systems and structures, with an emphasis on airframe components, that will enable them to progress into more advanced aircraft. Provides understanding of the safe and efficient operation of aircraft systems. Prior flight experience recommended. Audit available.

AVS 167. Aircraft Systems: Powerplant, 3 Credits.
Designed to give students the background in aircraft systems and structures, with an emphasis on powerplant components, that will enable them to progress into more advanced aircraft. Provides understanding of the safe and efficient operation of aircraft systems. Prior flight experience recommended. Audit available.
AVS 177. Pilot-Human Factors and Safety Management. 4 Credits.

AVS 207. Flight Preparation Lab Level 2. 1 Credit.
Provides an opportunity for practice 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 215. Helicopter: Commercial Flight B. 4 Credits.
Continues the Commercial Pilot Rotorcraft Helicopter training activities and includes cross-country flight operations and a review of previous items learned during the introduction to Commercial Pilot training. Increases knowledge about efficiently planning and executing cross-country flights as well as offshore operations required for commercial pilots. Includes training for the instrument rating. The AVS 211, 212, 213, 214 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 133 or AVS 135. Coreq.: AVS 207.

AVS 216. Helicopter Advanced Commercial. 5 Credits.
Continues the Commercial Pilot Rotorcraft Helicopter training activities. Includes review of previous items learned as well as advanced commercial maneuvers. Includes training focused on specialty commercial operations appropriate to the desired career. Provides flight and ground training to qualify to take the FAA knowledge and practical Helicopter Commercial Pilot tests. Flight training fees apply and cover a specific amount of training; Additional funding may be required. Prerequisite: AVS 156. Coreq.: AVS 207.

AVS 217. Aviation Weather Services. 4 Credits.
Provides detailed exposure to, and practice with, aviation weather products that are used to make pre-flight and in-flight decisions, including forecasts, observations, maps and charts. Prerequisite: AVS 127 and GS 109. Audit available.

AVS 225. Airplane: Commercial Flight. 4 Credits.
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 Credits.
Designed to prepare students for a career in aviation. Explores aviation employment opportunities. Includes interview and resume preparation. Intended for second year AVS students. Audit available.

AVS 230. Airplane: Flight Instructor Ground. 4 Credits.
Includes flight instructor fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 140. Audit available.

AVS 235. Airplane: Flight Instructor Flight. 2 Credits.
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. Coreq.: AVS 207 and AVS 230.

AVS 236. Airplane MEI Flight. 3 Credits.
Explores how to present, explain, demonstrate and assess flight-related skills and knowledge related to all levels of airplane multi-engine training, while flying from the Instructor’s seat. Provides training required to prepare for the initial FAA Certified Flight Instructor knowledge and practical tests, and the FAA Fundamentals of Instructing knowledge test. Flight training fees apply and cover a specific amount of training; additional funding may be required. Prerequisite: AVS 225. Coreq.: AVS 207.

AVS 237. Aviation Law and Regulations. 4 Credits.
Explores the applicable Federal Aviation Regulations through case law and current events. The FAA’s role in the development and regulation of the industry is examined. Covers how to reference, interpret and explain aviation law and regulations. Audit available.

AVS 242. Airplane: MEI Ground/Flight. 1 Credit.
Includes subject areas for Multi-Engine Airplane rating on a Flight Instructor certificate. Prepares student to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor - Multi-Engine practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 230, 235, and FAA Commercial Pilot Certificate with Instrument, CFI ratings. Co-requisite: AVS 207.

Includes subject areas for a single-engine land (SEL) Airplane rating on a Flight Instructor certificate. Covers the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor – SEL practical test. Flight training fees apply and cover a specific amount of training; Additional funds may be required. Prerequisites: AVS 236. Coreq.: AVS 207.

AVS 244. Airplane CFII Ground/Flight. 2 Credits.
Covers subject areas for an Instrument Airplane rating on a Flight Instructor certificate. Presents sufficient information to prepare for the Certified Flight Instructor - Instrument knowledge test. Includes preparation to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor - Instrument practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 243. Co-requisite: AVS 207.

AVS 255. Airplane: Pilot Performance. 1 Credit.
Designed to expose students to Cockpit Resource Management. Focuses on workload management and checklist usage. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 225 and FAA Commercial Pilot Certificate with Multi-engine Land and Instrument rating. Co-requisite: AVS 207.

AVS 260. Helicopter: CFI Ground. 4 Credits.
Instructs flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 150. Audit available.

AVS 265. Helicopter: CFI Flight. 3 Credits.
Provides the opportunity to present, explain, demonstrate and assess flight-related skills and knowledge related to all levels of helicopter training, including Instrument, while flying from the Instructor’s seat. Provides training required to prepare for the initial FAA Certified Flight Instructor and Instrument Instructor knowledge and practical tests, and the FAA Fundamentals of Instrument knowledge test. Flight training fees apply and cover a specific amount of training; Additional funding may be required. Prerequisite: AVS 216. Coreq.: AVS 207.

AVS 267. Economics of Flight Operations. 4 Credits.
Examines management philosophies and accounting procedures as they apply to general aviation. Includes business aspects of maintaining and flying aircraft, operating airport facilities, and managing passenger/cargo activities. Guest speakers from the industry may be featured. Audit available.

AVS 275. Airplane: Professional Pilot. 3 Credits.
Provides further post-commercial instruction and PIC flight time in single and multi-engine aircraft for those not selecting the flight instructor option. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 225 and FAA Commercial Pilot Certificate with Instrument rating. Co-requisites: AVS 207.

BI 55. Human Biology. 4 Credits.
Surveys human body systems. Exercises include the identification of structural components of the body as well as investigations in physiology. Designed for students in the Medical Assisting and Ophthalmic Medical Technology programs. Prerequisites: Good command of the English language and Placement into RD 90. Audit available.

BIOLOGY
BI 101. Biology, 4 Credits.
Introduces the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. A laboratory science course designed for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 101H. Biology: Honors, 4 Credits.
An honors laboratory science course designed for non-biology majors. Introduces the properties of life, morphology and physiology of cells, cell chemistry, energy transformation, and the basic principles of ecology. Course explores the application of biological principles to other disciplines. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores AND 325 GPA. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 102. Biology, 4 Credits.
Practically synthesizes, cell division, genetics, reproduction and development, and evolution. Designed as a laboratory science course for non-biology majors. Introduces the course of a three-course sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 103. Biology, 4 Credits.

BI 112. Cell Biology for Health Occupations, 5 Credits.
Introduces the study of the scientific method, cell structure and function, principles of inheritance, and laboratory skills. Includes topics and skills required to continue to Anatomy and Physiology and Microbiology. Prerequisites: WR 115, RD 115, and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/ASOT-B.

BI 121. Introduction to Human Anatomy & Physiology I, 4 Credits.
Surveys anatomical terminology, basic chemistry, cell structure and function, tissues, and the skeletal system. Prerequisites: WR 115, RD 115 and MTH 65. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/ASOT-B.

BI 122. Introduction to Human Anatomy & Physiology II, 4 Credits.
Surveys the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive, urinary, and some coverage of human development, human genetics, and immunology. Lecture discussions are complemented by laboratory exercises, dissections, microscopy, and multimedia. Prerequisites: BI 121, RD 115, placement into WR 121 and MTH 65. Audit available.

BI 141. Habits: Life of the Forest, 4 Credits.
Examines structure and function of Oregon forest ecosystems. Covers distribution and interactions of plants, animals, microorganisms, climate and basic ecology. Introduces the basic ecological principles of biomes and primary productivity. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 142. Habitats: Marine Biology, 4 Credits.
Examines marine environment and the ecology, physiology, and morphology of marine plants and animals, emphasizing Oregon. Laboratory focuses on identification and environmental testing. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 143. Habitats: Fresh Water Biology, 4 Credits.
Covers environments of freshwater streams, lakes, and marshes. Includes effects of physical and chemical factors on organisms, along with the organisms' 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. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 150. Intro. to Fish and Wildlife Conservation and Management, 4 Credits.
Covers 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. Includes wildlife examples from Oregon. Prerequisites: Placement into MTH 60 and placement into WR 115. Recommended: BI 101 or equivalent. Audit available.

BI 160. Ecology/Field Biology: Coast, 2 Credits.
Field trip experience designed to introduce the relationships among plants, animals and the general geologic formation of various life zones for the Oregon Coast. Audit available.

BI 161. Ecology/Field Bio: Great Basin, 2 Credits.
Introduces the relationships among plants, animals and the general geological formations of various life zones for the Great Basin and/or Cascade geographical areas through a field trip experience. Audit available.

BI 163. Organic Gardening, 4 Credits.
Introduces the structure and function of soils including of soil food web, composting and compost tea, and the basics of biogeochemical cycling. Explores basic plant anatomy and the growing of flowers, vegetables and fruits in the Pacific Northwest. Includes discussion of organic pest control, beneficial insects, and pruning and grafting and exploration of these concepts in the laboratory. An interest in plants and an entry level high school biology course are recommended. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 164. Bird ID and Ecology, 4 Credits.
Introduces the biology of birds of the Pacific Northwest. Emphasizes learning bird identification in the field by sight and sound. Covers the study of avian ecology, natural history and behavior. Introduces field techniques for identifying and studying birds. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 198. Independent Study - Biology, 1-4 Credit.
Provides an opportunity for students to work independently on an individualized area of study within biology under the sponsorship and guidance of a biology faculty member. Prerequisite: Instructor permission. Audit available.

BI 200A. Principles of Ecology: Field Biology, 2 Credits.
Introduction to concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component covering plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 200B. Principles of Ecology: Field Biology, 4 Credits.
Introduces concepts of ecology. Includes lecture component covering the concepts of ecology and diversity of life and a field component covering plants, animals, or other kingdoms, and interactions with their environment. May involve national or international travel. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

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BI 200C. Principles of Ecology. Field Biology, 6 Credits. Introduction to ecological concepts and field techniques. A laboratory science course designed to have students develop knowledge about plant anatomy, physiology, how humans interact with plants, and particularly taxonomy with an evolutionary focus. Areas covered include mosses, ferns, conifers, and flowering plants. Recommended for students interested in agriculture, horticulture, ethnobotany, and general botany. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BI 202. Botany: An Introduction to the Plant Kingdom. 4 Credits. A laboratory science course designed to help students develop knowledge about plant anatomy, physiology, how humans interact with plants, and particularly taxonomy with an evolutionary focus. Areas covered include mosses, ferns, conifers, and flowering plants. Recommended for students interested in agriculture, horticulture, ethnobotany, and general botany. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.

BI 211. Principles of Biology. 5 Credits. Includes introduction to science, biochemistry, metabolism, the cell, molecular biology, and reproduction. The first course of a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Recommended: High school biology and chemistry within the past seven years. Prerequisites: WR 115 and RD 115 or equivalent placement test scores, and MTH 95 or higher. Prerequisites/Concurrent: CH 151 or higher; or instructor permission. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.

BI 212. Principles of Biology. 5 Credits. Includes inheritance, the genetic code, modern and classical genetics, evolution, diversity, and systematics. May include some dissection of plants and animals. The second course in a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Prerequisite: BI 211 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.

BI 213. Principles of Biology. 5 Credits. Includes plant and animal anatomy and physiology, and individual, population, community and ecosystem ecology. The third course of a three-course sequence for students majoring in biology and the sciences, including pre-medical, pre-dental, chiropractic, pharmacy, and related fields. Prerequisite: BI 212 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.

BI 221. Human Genetics. 3 Credits. Presents 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, and (BI 101 and BI 102), or (BI 211 and BI 212), or BI 112. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.

BI 222. Human Anatomy & Physiology I. 4 Credits. Introduces anatomy, cell, tissues, the integument, skeletal, muscular and nervous systems. It is the first course of a three-course sequence. Includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. Prerequisites: WR 115, RD 115 and MTH 65 or equivalent placement test scores, and BI 212. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.
BMZA 100. Introduction to the Biology and Management of Zoo Animals. 4 Credits.
Examines the fundamental concepts of animal management including health and safety, feeding and handling, enclosure management, behavior and population management, plus maintenance of records and permits. Prerequisites: WR 121 and MTH 65. Department permission required. Audit available.

BMZA 105. Comparative Vertebrate Anatomy and Physiology I. 4 Credits.
Provides a comparative approach to structure, function, and evolution of the vertebrate classes. Examines histology and organ systems with emphasis on integumentary, skeletal, muscular, and nervous systems. Includes laboratory dissections of representative vertebrate specimens. Prerequisites: BI 112 or (BI 211 and 212) and (CH 151 or CH 104 or above). Department permission required. Audit available.

BMZA 106. Comparative Vertebrate Anatomy and Physiology II. 4 Credits.
Examines the critical importance of observation plus veterinary treatment caused diseases. Explores nutritional needs of orphaned animals, geriatric animals and nutrient requirements across taxa. Prerequisites: MTH 65 and (CH 151 or CH 104 or higher). Department permission required. Audit available.

BMZA 107. Basic Horticulture for Zoo Keepers. 4 Credits.
Examines the diversity of taxa within amphibians and reptiles and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 100. Department permission required. Audit available.

BMZA 108. Animal Nutrition. 4 Credits.
Introduces basic principles of captive management and reproduction and genetic management, animal relocations, and collection and regional planning with the use of studbooks and various cooperative groups. Prerequisites: BMZA 101. Department permission required. Audit available.

BMZA 201. Zoo Biology & Management II - Amphibians and Reptiles. 4 Credits.
Examines the diversity of avian taxa and how this relates to their captive husbandry and management needs and conservation. Examines histology and organ systems with emphasis on integumentary, skeletal, muscular, and nervous systems. Includes laboratory dissections of representative vertebrate specimens. Prerequisites: BMZA 105. Department permission required. Audit available.

BMZA 202. Zoo Biology & Management II - Birds. 4 Credits.
Examines the diversity of avian taxa and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 203. Zoo Biology & Management IV - Mammals. 4 Credits.
Examines the diversity of mammalian taxa and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 204. Zoo Water Quality Management. 2 Credits.
Introduces the fundamental principles and application of water management techniques to water systems typically used in zoos. Prerequisites: MTH 65 and (CH 151 or CH 104 or higher). Department permission required. Audit available.

BMZA 250. Conservation Biology. 4 Credits.
Examines the challenges of declining biodiversity and examines the role of zoos in contributing to population and habitat conservation. Provides field experience with species conservation programs. Prerequisites: BMZA 101. 202, 203. Department permission required. Audit available.

BMZA 255. Wildlife Education Management. 4 Credits.
Introduces public relations issues and environmental and wildlife interpretative techniques. Provides an opportunity for skill development in the areas of wildlife interpretation and development of educational materials and programming for specific target audiences. Prerequisite: COMM 111 or SP 111. Department permission required.

BMZA 260. Exhibit Design. 2 Credits.
Explores the design process of zoo exhibits to ensure that the physical and psychological well-being of captive animals is considered as well as safety and aesthetic issues. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZA 265. Exhibit Construction, Maintenance, and Repair. 2 Credits.
Provides an overview of the basic concepts used in animal exhibit construction, maintenance and repair. Emphasizes safety, identification, selection, usage and care of hand and power tools to complete projects in a team environment. Introduces the use of construction materials, concrete and related hardscapes, reading blueprints, and communication regarding mechanical, electrical, and plumbing services. Prerequisite: BMZA 101. Department permission required. Audit available.

BMZ 202A. Cooperative Education in Zoos. 4-5 Credit.
Provides an opportunity to apply classroom learning through work experience in animal care and management at the Oregon Zoo, supervised by professionals on site and by program instructor(s). May be taken up to four times for credit. Prerequisites: BMZA 100 and 101. Department permission required.

BMZA 280B. Cooperative Education: Zoological Specialty. 4 Credits.
Provides an opportunity to apply classroom learning to hands-on specialty work experience matching specific learning objectives at a department-approved worksite related to animal management, supervised by professionals on site and by program instructor(s). Prerequisite: BMZA 280A. Department permission required.

BI 102. Current Topics in Bioscience Technology. 2 Credits.
Provides an overview of current topics in Bioscience Technology. Includes recombinant DNA technology, bioremediation, forensics, gene therapy, genetically modified organisms (GMO), stem cell technology, pharmaceutical drug discovery and medical devices as well as ethical and legal issues surrounding biotechnology today. Recommend: BI 112 or BI 211 or equivalent. Audit available.

BI 105. Safety in the Bioscience Workplace. 2 Credits.
Survey of technical and regulatory aspects of physical, chemical, radiation and biological safety in the bioscience laboratory. Topics covered include: mechanical and electrical systems, hazards due to temperature and pressure, handling and storing hazardous chemicals, personal protective equipment, chemical waste disposals and spill, ionizing radiation and control measures, biological containment, disinfection/sterilization, medical waste handling, applicable regulations and guidelines. Prerequisites: Placement into WR 115 and RD 115. Audit available.

BI 107. Bioscience Lab Math. 2 Credits.
Develops mathematics skill and problem-solving related to work in a bioscience laboratory or biomanufacturing environment. Includes calculations for solution preparation, analysis and manipulation of molecules and cells, analysis and interpretation of data and commonly used statistical methods. Prerequisite: MTH 65 or placement into MTH 95. Recommend: Prior or concurrent college-level course in Chemistry, or BI 112 or 211. Audit available.

BI 109. Basic Laboratory Techniques and Instruments. 5 Credits.
Introduces fundamental principles and practices for bioscience laboratory. Provides fundamental and operative knowledge in a controlled environment in biotechnology. Prerequisite: BI 112 or BI 211, and MTH 65. Prerequisite: Placement into WR 115 and RD 115. Prerequisite or concurrent enrollment in: BI 105 and BI 107.
BIT 125. Quality Systems in Bioscience Technology. 2 Credits.
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. Audit available.

BIT 126. Applied Quality Practice. 3 Credits.
Introduces concepts and skills that are needed by entry level workers in the regulated bioscience and related work environments. Emphasizes validation, compliance, CAPA, audit, LEAN work habits, material and product control and coordinated quality teamwork through laboratory-based activities. Prerequisites: BIT 125 and BIT 109 or instructor permission.

BIT 181. Exploring Bioscience. 3 Credits.
Provides an overview and analysis of various Bioscience Technology work environments including research, development, and manufacturing. Covers career options, pathways, and development of skills that are needed for identification and procurement of entry level positions, education, and training opportunities in the bioscience field. Includes portfolio development and refinement of job search, resume writing and interview skills. Participation in field trips is essential. Prerequisite/concurrent: BIT 105, BIT 107, and BIT 109 or instructor permission. Recommended: completion or concurrent enrollment in BIT 125.

BIT 201. Immunochemical Methods. 5 Credits.
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 108 or BIT 110; BI 112 or CH 100 or higher; or instructor permission.

BIT 203. Recombinant DNA. 5 Credits.
Laboratory-intensive course focusing on the strategies and techniques used in recombinant DNA work. Covers vector and insert options and preparation, quantification 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 Credits.
Introduction of commonly used methods for separation of biological molecules for both analytical and preparative applications. This laboratory-intensive course will cover the principles of and practice in filtration, differential precipitation, and electrophoretic and chromatographic techniques. Prerequisite: BIT 109 or BIT 110; and any of the following: BIT 155, BI 112, CH 100 or higher; or instructor permission.

BIT 207. Cell Culture. 5 Credits.
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 common culture problems. Prerequisite: BIT 109 or BIT 110 or instructor permission.

BIT 215. Protein Purification. 5 Credits.
Application of commonly used methods for separation of biological molecules in multi-step protein purification. This laboratory-intensive course will focus on issues of recovery and yield, step-to-step analysis and troubleshooting, as well as documentation and reporting procedures and results. Prerequisite: BIT 205 or instructor permission.

BIT 223. Advanced DNA Techniques. 5 Credits.
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. 1-8 Credits.
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 Credit.
Prerequisites: Department permission required.

BUILDING CONSTRUCTION TECH

BCT 100. Overview to the Construction Industry. 3 Credits.
Introduces construction industry practices in a domestic and national context. Explores the roles and responsibilities of those involved in construction projects from inception to completion. Introduces the various phases of construction including planning, design, documentation, bidding, permitting, pre-construction, supervision, and close-out. Presents the role of planning, scheduling, project organization, and communication in successful project management. Audit available.

BCT 101. Principles of Construction Surveying. 3 Credits.
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 BIT 104 or instructor permission. Audit available.

BCT 102. Residential Printreading. 3 Credits.
Covers a collaborative learning framework for the development of print reading skills related to residential building construction. Includes analyzing, interpreting, and measuring plans for relevant construction information. Covers work limited to residential prints. Audit available.

BCT 103. Residential Materials and Methods. 3 Credits.
Introduces function and performance characteristics of basic building materials, components, methods, and sequences in the construction process. Emphasizes residential construction. Audit available.

BCT 104. Construction Math. 3 Credits.
Provides a framework for learners to apply mathematical concepts and principles to building construction situations 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 20 or department approval. Audit available.

BCT 105. Vectorworks for Constructors. 3 Credits.
Learn to create 2D architectural working drawing using VectorWorks CAD based software. A building blocks approach will be used to help learners develop the skills and vocabulary necessary to generate their own working drawings. Suitable for both MAC and Windows operating systems. Recommended: Blueprint reading and basic computer skills. Audit available.

BCT 106. Hand Tool/Power Tool Use and Safety. 3 Credits.
Develops understanding of the hand tools and power tools used in the construction trades. Identifies commonly used hand/power tools, selecting the correct tool to complete assigned projects and working in a safe and competent manner. Emphasizes safety and care of tools. Audit available.

BCT 108. Introduction to Building Science - Energy Efficient Housing. 3 Credits.
Introduces students to the basic principles of building science in residential construction and the dynamic relationship between construction practices, material choices, physics and building operation. Critical topics include: energy and moisture transport in buildings, understanding building enclosures, comfort, building tightness and ventilation. Audit available.

BCT 115. Introduction to Residential Greenroofing. 1 Credit.
Provides a basic understanding of local residential greenroof design and installation. Covers greenroof benefits, best practices, material selections, and appropriate plantings; includes hands-on installation. Audit available.

BCT 116. Alternative Building Design. 3 Credits.
This course introduces students to natural green building principles used in the design and construction of alternative buildings such as straw bale, cob, and rammed earth. Student team will develop designs by constructing scaled models, and will then prepare and deliver presentations that defend and promote their designs. Audit available.

BCT 120. Floor Framing. 3 Credits.
Covers basic floor framing systems and principles used in residential construction. Includes floor systems installed on foundations using current building construction methods. Includes 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. Audit available.
BCT 121. Wall Framing. 3 Credits.
Covers wood wall framing methods and principles currently used in residential construction. Includes wall layout and assembly of studs, corners, partitions and openings. Includes calculating material quantities, related codes, structural sheathing, interior wall bracing, bay framing, window box framing, framing and arching openings and stair framing construction. Prerequisite: BCT 106 or instructor permission. Audit available.

BCT 122. Roof Framing I. 3 Credits.
Covers basic roof rafter framing methods currently used in residential construction. Includes calculations used to solve rafter lengths for various roof slopes and spans. Covers rafter nomenclature, layout assembly methods, related codes, material quantity, ceiling joist, collar ties. Includes gable roof, gambrel roof and hip roof framing. Prerequisites: BCT 104 and 106, or instructor permission. Audit available.

BCT 123. Roof Framing II. 3 Credits.
Introduces roof framing Continuing from BCT 122. Covers the calculations necessary to layout, cut and assemble more advanced roofs. Includes intersecting equal pitch valley roofs, eave returns, roof sheathing and bay roof framing. Covers roof truss theory. Audit available.

BCT 127. Residential Concrete. 6 Credits.
Covers residential concrete construction, including layout, footing, foundation walls, slabs, stairs, and the handling and curing of concrete. Explore and use different forming methods and materials to erect a concrete foundation. Prerequisite: BCT 106 or instructor permission. Audit available.

BCT 128. Exterior Finish. 6 Credits.
Covers installation of various exterior siding products, material quantity calculations and labor costs. Includes installation of cedar bevel, cement composite horizontal lap, cedar shingles, fancy cut shingles and cultured stone. Covers ceiling soffits, door, window and corner trims. Introduces roofing including composition, cedar shake and shingle roofing. Covers roof flashings, vents, drip caps and valleys. Prerequisites: BCT 106 or instructor permission. Audit available.

BCT 129. Mechanical Planning for Kitchens and Baths. 4 Credits.
Covers electrical, plumbing, HVAC systems used in residential kitchens and baths. Students will become familiar with the code requirements and restrictions through the examination of remodeling case studies. Students will design general and task lighting systems for kitchens and baths. Audit available.

BCT 130. Construction Safety. 3 Credits.
Requirements for safety on the job site, Occupational Safety and Health Act and other related regulations and legislation, accident prevention and hazard identification and procedures. Audit available.

BCT 132. Computer Applications for Construction. 3 Credits.
Covers information generation, processing, distribution and utilization for the management of construction projects and construction companies. Emphasizes the design of the information process, the role of information technology in construction, software selection and the ongoing evaluation of the efficiency and effectiveness of the information process. Audit available.

BCT 133. Commercial Materials and Methods. 3 Credits.
Introduces function and performance characteristics of basic building materials, components, sequences and methods in the construction process. Emphasizes commercial construction. Audit available.

BCT 134. Construction Scheduling. 3 Credits.
Introduces methods used in planning and scheduling construction projects. Emphasizes the development and proper use of construction schedules, Critical path methods and resources and cost loading. Introduces MS Project computer scheduling software to build and monitor schedules. Recommended: Basic knowledge of Microsoft Windows. Prerequisite: BCT 104 or Instructor permission. Audit available.

BCT 150. Mechanical, Electrical and Plumbing. 4 Credits.
Covers the principles and applications of mechanical, electrical, plumbing and related building systems used on commercial construction projects. Includes heating, ventilating, air conditioning, plumbing, fire protection, power, lighting, security and related distribution and control systems. Audit available.

BCT 202C. Business Principles for Construction. 3 Credits.
Explores the fundamental business principles and practices used in managing a residential construction company. Includes establishing objectives in marketing, operations and finance, and the relationship between those business activities and the planning and management methods for achieving objectives. Presents the general legal requirements, accounting and record keeping practices. Audit available.

BCT 202D. Business Principles for Design/Build. 3 Credits.
Explores the fundamental business principles and practices used in managing a residential design-build construction company. Includes establishing objectives in marketing, operations and finance, and the relationship between those business activities and the planning and management methods for achieving objectives. Presents the general legal requirements, accounting and record keeping practices. Prerequisites: WP 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BCT 203. Interior Finish. 6 Credits.
Drywall: Covers related codes, estimating materials and installation methods in residential drywall. Includes drywall products, taping, corner beads, joint compounds, textures and patching. Finish Carpentry: Covers material trim installation, estimation of trim quantities and costs. Includes the appropriate miter cuts required and installation of base, casing, crown, wainscot panel molding. Includes interior door installation and window surrounds. Student may not receive credit for both BCT 203 and BCT 224 or BCT 226. Prerequisite: BCT 106 or instructor approval. Audit available.

BCT 204B. Construction Estimating - Residential. 3 Credits.
Introductory class in construction estimating concentrating on basic residential estimating techniques. 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. Audit available.

BCT 204C. Construction Estimating - Commercial. 3 Credits.
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. Audit available.

BCT 206. Sustainable Construction Practices. 3 Credits.
Introduces the environmental, economical, and human consequences resulting from conventional building practices and the need for sustainable design and construction. Audit available.

BCT 207. Construction Job Costing. 3 Credits.
Traces the construction dollar flow from time sheet to balance sheet. Emphasizes microcomputer methods and 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. Audit available.

BCT 209. VectorWorks for Contractors II. 3 Credits.
Explores and expands on the study of Vectorworks CAD based software. Covers file management, drawing tools and rendering methods used to create orthogonal project documents and realistic three-dimensional conceptual drawings. Introduces Renderworks software for adding life like effects, colors and textures to three-dimensional Vectorworks drawings. Prerequisite: BCT 105 or instructor permission. Audit available.

BCT 211. Remodeling. 6 Credits.
Presents residential remodeling construction strategies and processes commonly encountered by remodelers. Covers obtaining building permits, as well as hands-on remodeling projects involving (but not limited to) framing, concrete, interior and exterior finish, and basic electrical, plumbing and mechanical ventilation. Prerequisites: BCT 102, BCT 104 and BCT 106 or instructor approval. Audit available.

BCT 213. Commercial Pintreading. 3 Credits.
Covers typical commercial and civil construction plans and practices. Presents skills for print reading and applying knowledge to commercial construction projects. Prerequisite: BCT 102 or instructor permission based on industry experience in print reading. Audit available.

BCT 214. Advanced Construction Estimating. 3 Credits.
Advanced estimating for larger scale projects. Discussion of labor rates, specifications, budget estimating, assembly of bids bidding procedures, including use of computer estimating software. Prerequisite: BCT 204C or instructor permission. Audit available.

BCT 216. Cabinetry I. 2 Credits.
Focuses on materials, hardware and techniques used to build industry standard cabinetry. Covers productive uses and safe operation of hand and power tools as well as equipment and machinery used for the production of cabinetry. Generate shop drawing and subsequently machine, mill and assemble a cabinet complete with plastic laminate countertop. Audit available.
BCT 217. Cabinetry II. 2 Credits.
Covers more advanced forms of cabinet construction and joinery such as doweling, box joints, dovetail joints and lock shoulders. Machining and assembly of the five piece door will be covered. An instructor designed cabinet project will supply the frame work for learning experience. Prerequisite: BCT 216 or BCT 219. Audit available.

BCT 218. Woodworking Projects. 2 Credits.
Designs for individual work on cabinet projects. Students are required to present shop drawings for instructor approval before beginning. Students must supply their own materials. Instructor will evaluate student knowledge of hand and power tool safety at first class meeting to determine whether skill level is appropriate for independent work. Audit available.

BCT 219. Cabinetmaking I. 6 Credits.
Learners will become familiar with the skills, materials, hardware and equipment necessary to produce industry standard cabinetry. Students will learn and demonstrate the safe use of cabinetmaking hand and power tools. Students will draw shop drawings and estimate materials for cabinetmaking jobs. Learners will develop cabinetmaking skills by constructing instructor designed cabinet projects. Audit available.

BCT 220. Cabinetmaking II. 6 Credits.
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 cabinetry project making & Cabinet installation methods for kitchens and baths are covered including room preparation, cabinet layout, cabinet storage, cabinet and countertop installation, appliance installation, and moldings. Kitchen and bath design skills will be developed by hand drafting assigned case studies. Prerequisite: BCT 219. Audit available.

BCT 221. Construction Law for the Contractor. 3 Credits.
Introduces basic principles of construction law used in managing construction contracts. Gain working knowledge of construction law principles through examination of case studies. Audit available.

BCT 222. Engineering for Constructors. 3 Credits.
Presents the fundamentals of analysis and design of structural systems used in buildings to students with limited technical training. Introduces basic contemporary structural systems in masonry, steel, concrete and wood. Covers determination of support forces, bending moments, shear, strength, properties of materials, loads and dimensional properties. Prerequisites: BCT 104, 102 or instructor approval. Audit available.

BCT 223. Finished Stair Construction. 3 Credits.
Covers the material estimation and installation of both open and closed interior residential staircases. Includes newel posts, balustrades, handrails/ guardrails, shoerails and tread caps. Emphasizes the methods used to construct finish stairs and relevant building codes. Prerequisites: BCT 106 or instructor permission. Audit available.

BCT 225. Construction Project Management. 3 Credits.
Introduces management concepts and techniques used on construction projects. Includes planning, scheduling, project organization, communications, cost control. Covers project/contract administration, and project close out. Audit available.

BCT 226. Finish Carpentry. 2 Credits.
Covers techniques and methods used to hang and install interior doors, install door hardware, measure, cut and install base trim, casing, crown molding, wainscotting and various interior window trim treatments, and in plastic laminate counter top fabrication. Covers estimating techniques used to establish labor and material costs associated with finish carpentry. A student may not receive credit for both the BCT 223, 224 and 226 series and BCT 203. Audit available.

BCT 229. Introduction to Kitchens and Baths. 2 Credits.
Explores the history and trends of the kitchen and bath industry. Focuses on basic kitchen & bath layout, and specification of specialized equipment, materials and surfaces required for safe and functional kitchens & baths. Products include cabinet systems, appliances, equipment and surfaces required for safe and functional kitchens & baths. Prerequisites: BCT 110 or instructor approval. Audit available.

BCT 244. Kitchen and Bath Cabinet Installation. 2 Credits.
Students will learn professional installation methods of kitchen and bath cabinetry. Room preparation, cabinet layout cabinet storage, cabinet and countertop installation, appliance installation, moldings will be covered. Customer relations and job site management techniques will be explored. Audit available.

BCT 280A. Cooperative Education: Building Construction. 1-12 Credit.
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. 1-5 Credits.
On-the-job training at a department-designated worksite, giving students experience in real work conditions and helping determine career choices. Department permission required.

BUILDING INSPECTION TECH

INS 280B. Cooperative Education: Field Experience. 1-5 Credit.
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.

BUSINESS ADMINISTRATION

BA 98. Business Administration: Skills and Issues. 1 Credit.
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 score-related learning project to allow for direct application of learning. The overarching goal is to develop a deeper understanding of business practices. Corequisite: BA 101. Audit available.

BA 101. Introduction to Business. 4 Credits.
Survey course in the field of business including topics such as management, finance accounting, marketing, production, computers, international business, small business, investments and other areas of general business interest. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 111. Introduction to Accounting. 3 Credits.
Introduces accounting cycles, including journalizing, posting to the general ledger, preparation of financial statements, petty cash, bank reconciliation, combined journal, special journals and payroll. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 113. Business Credit Principles. 3 Credits.
Introduces credit basics, the function of credit in our economy, credit granting concepts, credit reporting, and credit management procedures, with the goal to minimize bad debt losses and maximize sales volume. Recommend: BA 101. Audit available.

BA 114. Financial Survival. 1 Credit.
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. Introduces: funding college, budgeting, wise use of credit, controlling debt, basic financial planning, effective financial decision making, and avoiding financial mistakes and pitfalls. BA 114 and CG 114 are equivalent. Only one may be taken for credit. Prerequisites: WR 90, RD 90, and MTH 20 or equivalent placement test scores. Audit available.

BA 131. Introduction to International Business. 4 Credits.
Covers computer concepts and the use of information technology in business organizations including the use of word processing, spreadsheet, and presentation software. Includes introduction to hardware, software, databases, system development, and tools that businesses use for communication and collaboration. Includes appreciating the value of ethical conduct in a business/ computer environment and the impact of technology on industry and society. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 141. Introduction to International Business Law. 3 Credits.
Surveys international aspects of traditional business law subjects (sales, commercial paper, corporate law, agency, etc.) and related subjects (antitrust law, administrative law, trade regulation, etc.). Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 177. Payroll Accounting. 3 Credits.
Covers fundamental skills and basic knowledge in the area of business payroll. The focus of the course is primarily in the following areas: payroll and personnel record keeping, calculation of gross pay using various methods, calculation of Social Security and Medicare taxes, calculation of federal and state income taxes, calculation of federal and state unemployment taxes, journalizing and posting payroll entries, and completing various federal and state forms. Prerequisites: BA 111 Introduction to Accounting or BA 211 or instructor permission. Recommended: MTH 30 Business Mathematics, and Microcomputer experience. Audit available.
BA 203. Introduction to International Business. 3 Credits.
Explores processes involved in 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. Audit available.

BA 205. Business Communication Using Technology, 4 Credits.
Focuses on using current technology to create, revise, and design business documents: letters, memos, e-mail, reports, minutes, simple instructions, and resumes. Incorporates the use of library and Internet resources to collect information. Includes oral presentations using technology presentation tools. Recommended: WR 121, BA 131, CAS 133, or computer literacy, BA 101. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 206. Management Fundamentals, 3 Credits.
Introduces business management theory, including the basic functions of planning, organizing, directing, leading, and controlling as well as factors contributing to change in current management approaches. Recommended: BA 101, Introduction to Business. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 207. Introduction to E-Commerce, 4 Credits.
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 alternative contexts: retail industries, affects on business processes including electronic transactions, supply chains, decision making and organizational performance. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 208. Introduction to Nonprofits & Philanthropy, 4 Credits.
Surveys the role of the nonprofit and voluntary organizations in American society including the history, theory and challenges of the third sector. Includes the Students4Giving service learning project where students serve as philanthropists to their local community. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Recommended: BA 101. Audit available. This course fulfills the following GE requirements: Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAAS, Social Sciences/AGS, Social Sciences/ASOT-B.

BA 209. Introduction to Grant Writing, 4 Credits.
Covers identifying and evaluating appropriate funding sources, developing community relationships, and crafting successful funding proposals. Develops skills and knowledge necessary to prepare a competitive grant application. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BA 210. Advanced Accounting Spreadsheet Application, 3 Credits.
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. Audit available.

BA 211. Principles of Accounting I, 3 Credits.
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: CAS 133 or equivalent placement test scores. Audit available.

BA 212. Principles of Accounting II, 3 Credits.
Continues the presentation of fundamental issues begun in BA 211. Introduces statement of cash flows and financial statement analysis. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BA 211. Audit available.

BA 213. Managerial Accounting, 4 Credits.
Covers accounting information from management perspective for planning, performance evaluation and for decision making purposes. Includes cost concepts, product costing, cost-volume-profit relationships, profit planning, variance analysis, responsibility accounting and capital budgeting. Prerequisite: BA 211. Audit available.

BA 215. Basic Cost Accounting, 3 Credits.
Covers cost accounting concepts, application, and techniques employed in the accumulation and reporting of manufacturing cost data. Particular attention shall be paid to job order costing, process costing, joint and by-product costing, standard costs, budgeting and analysis of variances. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores; and BA 211. Audit available.

BA 218. Personal Finance, 4 Credits.
Explores the role of the consumer in our economy, problems of financing family and individual needs, including budgeting, banking relationships, borrowing, insurance, risk management, real estate, investing, portfolio management, retirement and personal taxes. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BA 222. Financial Management, 3 Credits.
Covers the key financial decisions and practices and includes analysis of company resources, types and sources of financing, forecasting and planning methods, and the roles of the money and capital markets. Recommended: BA 212, MTH 60. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 223. Principles of Marketing, 4 Credits.
Provides a general knowledge of marketing emphasizing marketing mix elements and target markets for consumer and industrial products, marketing strategies, customer behavior, market planning and promotion. Recommended: BA 101. Prerequisites: WR 115, RD115 and MTH20 or equivalent placement test scores.

BA 224. Human Resource Management, 3 Credits.
Attention is given to human behavior, employment, employee development, performance appraisal, wage and salary administration, employment and job rights, discipline and due process, and labor-management relations. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 226. Business Law I, 4 Credits.
Discusses fundamental concepts, principles, and rules of law that apply to business transactions. Includes the function and operation of the courts, business crimes, torts, contract law, intellectual property, the application of the Uniform Commercial Code to business activities and recent developments in business law, such as cyberlaw and electronic commerce. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BA 227. Business Law II, 3 Credits.
Discusses fundamental concepts, principles and rules of law that apply to business organizations. Includes agency, property law, sales transactions, partnerships, corporations and government regulations. Recommended: BA 226. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 228. Computer Accounting Applications, 3 Credits.
Introduces double-entry, fully integrated computerized general ledger software. Topics include general ledger, accounts receivable, accounts payable, payroll, fixed assets, bank reconciliations, and inventory. Recommended: BA 111 or BA 211 and CAS 133. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 234. International Marketing, 3 Credits.
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/services, pricing, promotion and distribution are examined. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 235. Social Media Marketing, 4 Credits.
Covers the use of social networks and emerging media in marketing and the role of social media in developing corporate, institutional or brand identity. Prior completion of Principles of Marketing (BA 223) is recommended. Completion of Computers in Business (BA 131), Basic Computer Skills (CAS 133) or computer literacy recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BA 237. Fundamentals of Import/Export, 3 Credits.
Examines motivations and procedures for the import and export of goods and services. Emphasizes U.S. import/export regulations, documentation, logistics, community resources and customer services. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 238. Sales, 3 Credits.
Offers a blend of practicality and theory on industrial, commercial and retail sales. Demonstrates and practices basic sales techniques, explores communication and motivation as they relate to selling and examine the function of sales relative to the total marketing program. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 239. Advertising, 3 Credits.
Covers the basics of planning, creating, using, and placing advertising in the business world. Reviews entire field of advertising as basis for students to 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. Audit available.
COURSE DESCRIPTIONS

PORTLAND COMMUNITY COLLEGE  2014-2015

BA 240. Nonprofit Financial Management and Accounting. 4 Credits.
Develops conceptual understanding of the financial management and accounting procedures, records and statements for non-profit organizations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and BA 111 or BA 211 or equivalent. Audit available.

BA 242. Introduction to Investments. 3 Credits.
Study popular investment vehicles—what they are, how they can be utilized and the risk return possibilities. Emphasizes stocks and bonds, mutual funds, options and real estate. Examines securities exchanges and the functions of the broker. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 244. Introduction to Records Management. 3 Credits.
Offers a study of the life cycle of records on all types of media from creation through destruction. Introduces recorders responsibilities 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. Audit available.

BA 249. Principles of Retailing and E-tailing. 3 Credits.
Covers analyzing target market, developing retail marketing mix elements, and reviewing store planning techniques used by retailers. Includes discussions of changing retailing environment and impact of government regulations. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 250. Small Business Management. 3 Credits.
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. Audit available.

BA 251. Office Management. 3 Credits.
Introduces organizing, planning, leading, and controlling functions of an office and the resulting role and responsibilities of the office manager. Recommended: BA 206. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores; and BA 101 or instructor permission. Audit available.

BA 255. Project Management - Business Environments. 4 Credits.
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 OIS 245. Project management is a broad term that can include many areas of a business. Recommend: BA 101, MSD 279, BA 250, and CAS 220. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 256. Income Tax. 3 Credits.
Introduces preparation of federal individual and sole proprietorship income tax returns. Provides brief overview of partnership and corporate returns. Audit available.

BA 270. Global Business Management. 3 Credits.
This course explores the contemporary issues and the unique challenges businesses face when moving into the int’l marketplace. The emphasis will be on the changing nature of firms doing business outside their national borders and learn how information technology and technological changes in our society have driven the globalization of products and markets. Recommend: BA 101, BA 203, and BA 234. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 277. Business Practices and Contemporary Social Issues. 4 Credits.
Introduces contemporary socio-economic and best practices within the business environment with a focus on global, domestic and internal business concerns. Individual and corporate decision-making will be examined in a rational, pragmatic, responsible and decisive manner. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores; and BA 101. Audit available.

BA 280A. Cooperative Education: Business Experience. 1-6 Credit.
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 instructor permission. Required concurrent, one time only: BA 280B.

BA 280B. Cooperative Education: Business Experience - Seminar. 1 Credit.
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 281. Accounting Skills Review. 2 Credits.
Revises knowledge of the accounting cycle and deepens understanding of accounting. Includes an initial assessment and provides timely and accurate feedback on journal entries, ledger, adjusting entries, closing entries and financial statement presentation. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BA 211.

BA 285. Human Relations-Organizations. 3 Credits.
Examines interpersonal interactions in organizations. Focus will be on human perceptions, communications, small group dynamics and leadership. Includes dynamics of change, cultural diversity, substance abuse, work stress, ethics and social responsibility, and the challenges of globalization. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 9235. Financial Statement Analysis I. 3 Credits.
Prerequisite: Completion of one time only: BA 280B. Required concurrent, one time only: BA 280A. Financial statement analysis from credit manager’s perspective. Includes common-sizing, ratio analysis, and cash flow analysis. Recommended: BA 113. Audit available.

BA 9703. Income Tax Preparation: Basic. 8 Credits.
Elements of taxation. Meets the statutory educational requirements for those wishing to be licensed income tax preparers in Oregon. Audit available.

BA 9706. Income Tax Preparation: Advanced. 3 Credits.
Provides comprehensive review of federal individual income tax law for return preparers and consultants. Includes update of changes in current law. Qualifies for CPE credit. Audit available.

CHEMISTRY

CH 100. Everyday Chemistry with Lab. 4 Credits.
Introduces chemistry related topics pertaining to everyday life. Includes topics such as renewable energy, clean air and water and global climate change using a relatively nonmathematical approach. Includes atomic/molecular structure, the periodic table, chemical bonding, intermolecular forces, chemical reactions, acids/bases and the social and environmental role of chemistry. Recommended for non-science majors to fulfill the Gen Ed science with lab requirement. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

CH 101. Inorganic Chemistry Principles. 5 Credits.
Introduces basic inorganic chemistry with an emphasis on solution chemistry. Fulfills a basic chemistry requirement for programs such as engineering technology, allied health, and others. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Recommended: one year of high school chemistry. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 104. Allied Health Chemistry I. 5 Credits.
For CPE credit. Audit available.

CH 105. Allied Health Chemistry II. 5 Credits.
Includes stoichiometry, gases, oxidation-reduction, acid-base concepts, equilibrium, physical and chemical properties of solutions, nuclear chemistry, and organic hydrocarbons. This is the second course in a three course sequence designed for students in a health science program, e.g. Nursing, Medical Laboratory Technician, Vet Tech, or for a laboratory science elective. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Prerequisite/Concurrent: MTH 95. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.
CH 106. Allied Health Chemistry III. 5 Credits.
Includes fundamental principles of organic chemistry and biochemical processes. This is the third course of a three course sequence. Prerequisite: CH 105 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 151. Preparatory Chemistry. 5 Credits.
Introduces basic chemical principles and computational problems found in General Chemistry with a concentration on developing both analytical and reasoning skills via problem solving. Prepares students wanting to take the CH 221-3 General Chemistry series that have no chemical background or have not taken a college or high school chemistry course in the last 3 years. Prerequisites: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available.

CH 211. Introduction to Biochemistry. 4 Credits.
Introduces the chemistry of biological systems. Principal topics covered are: the structure and function of biological molecules, the chemistry of heredity, metabolism and biological energy. CH 106 or 200-level organic chemistry required. Audit available.

CH 221. General Chemistry I. 5 Credits.
Explores measurements, properties of matter, nomenclature, atomic theory, chemical periodicity, and chemical bonding. Recommended for the following majors and pre-professional degrees: chemistry, natural science, engineering, medicine and dentistry. This is the first course in a three course sequence. Prerequisites: WR 115 and RD 115 or equivalent placement test scores, MTH 111, and CH 151 or instructor approval. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 221H. General Chemistry I: Honors. 5 Credits.
An honors version of General Chemistry I. Explores measurements, properties of matter, nomenclature, atomic theory, chemical periodicity, and chemical bonding. Recommended for the following majors and pre-professional degrees: chemistry, natural science, engineering, medicine and dentistry. This is the first course in a three course sequence. Prerequisites: WR 115 and RD 115 or equivalent placement test scores, MTH 111, and CH 151 with a B grade or higher in the last year (A grade recommended) or instructor approval. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 222. General Chemistry II. 5 Credits.
Explores stoichiometry, chemical reactions and equations; thermochemistry; physical chemistry of gases, liquids, solids and solutions; and chemical kinetics. Introduces organic chemistry. This is the second course in a three course sequence. Prerequisites: CH 221 or CH 221H. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 222H. General Chemistry II: Honors. 5 Credits.
An honors version of General Chemistry II. Explores stoichiometry; chemical reactions and equations; thermochemistry; physical states of matter including properties of gases, liquids, solids and solutions, and chemical kinetics. Introduces organic chemistry. This is the second course in a three course sequence. Prerequisites: A 'B' letter grade or higher in CH 221 or CH 221H. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 223. General Chemistry III. 5 Credits.
Explores acid-base chemistry, ionic equilibria, electrochemistry; nuclear chemistry; thermodynamics; and descriptive chemistry topics. Includes special topics as time and interest allow. This is the third course in a three course sequence. Prerequisite: CH 222 or CH 222H. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 223H. General Chemistry III: Honors. 5 Credits.
An honors version of General Chemistry III. Explores acid-base chemistry, ionic equilibria; electrochemistry; nuclear chemistry; thermodynamics; descriptive chemistry topics. Includes special topics as time and interest allow. This is the third course in a three course sequence. Prerequisite: A "B" letter grade or higher in CH 222 or CH 222H. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 241. Organic Chemistry I. 5 Credits.
Introduces functional groups, nomenclature, structure and chemistry of alkanes, alkenes, and alkynes, conjugation in alkenes, concertated reactions (Diels Alder), IR Spectroscopy, stereochemistry, reaction mechanisms and special topics as time and interest permits. This is the first course in a three course sequence. Recommended for chemistry and other laboratory science majors, and pre-professional students in medicine, dentistry, pharmacy, physical therapy, veterinary and chiropractic medicine, etc. Recommended: Successful completion of a year-long college general chemistry class in the last 3 years. Students receive Oregon University Systems upper division credit for Organic Chemistry 241, 242, and 243, upon successful completion of the ACS Organic Exam in CH 243. Prerequisite: CH 241. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 242. Organic Chemistry II. 5 Credits.
Introduces radical reactions; substitution and elimination reaction mechanisms; structure and chemistry of alcohols, ethers, epoxides and their sulfur analogues; introduction to organometallic compounds; arenes and aromaticity; structure and chemistry of aromatic compounds; NMR, UV-VIS and Mass Spectroscopy; special topics are included as time and interest permits. This is the second course in a three course sequence. Students receive Oregon University Systems upper division credit for Organic Chemistry 241, 242, and 243, upon successful completion of the ACS Organic Exam in CH 243. Prerequisite: CH 241. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 243. Organic Chemistry III. 5 Credits.
Introduces carboxylic acids, carboxylic acid derivatives, amines, carbohydrates, amino acids, proteins, lipids, nucleic acids, heterocyclic compounds, spectroscopy and selected topics. This is the third course in a three course sequence. Students receive Oregon University Systems upper division credit for Organic Chemistry 241, 242, and 243, upon successful completion of the ACS Organic Exam in CH 243. Prerequisite: CH 242. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 298A. Chemistry Independent Study. 1 Credit.
Provides an opportunity to work independently on an individualized area of study within chemistry under the sponsorship of chemistry faculty. Prerequisites: Previous coursework in chemistry and instructor permission, and WR 115, RD 115 and MTH 20 or equivalent placement test scores.

CHICANO/LATINO STUDIES

CHLA 201. Introduction to Chicano/Latino Studies I. 4 Credits.
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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

CHLA 202. Introduction to Chicano/Latino Studies II. 4 Credits.
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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
CHLA 203. Introduction to Chicano/Latino Studies III. 4 Credits.
Introduces the cultural heritage of Chicano/Latino people in the United States. Draws on disciplines such as anthropology, folklore, literature, film, and linguistics, folk, and popular culture, and examines the combination and integration of various traditions in Chicano/Latino communities. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

CHINESE
CHN 101. First Year Chinese. 5 Credits.
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. Audit available.

CHN 102. First Year Chinese. 5 Credits.
The second course of a three-course sequence in introductory Mandarin Chinese language and culture class, with the expansion on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Expands beginning learners’ language proficiency as well as cultural awareness and understanding. Recommended: CHN 101 or instructor permission. Audit available.

CHN 103. First Year Chinese. 5 Credits.
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. Recommended: CHN 102 or instructor permission. Audit available.

CHN 201. Second Year Chinese. 5 Credits.
Reviews and expands learners’ language proficiency as well as cultural awareness and understanding from first-year college Mandarin Chinese. Emphasizes effective skills in both the written and spoken language. The first course of a three-course sequence of second-year Mandarin Chinese. Prerequisite: CHN 103 or instructor permission. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

CHN 202. Second Year Chinese. 5 Credits.
Expands learners’ language proficiency as well as cultural awareness and understanding. The second course of a three-course sequence of second-year Mandarin Chinese language and culture, with a great emphasis given to improving effective communicative skills in both the written and spoken language and an understanding of the practices and products of Chinese culture. Prerequisite: CHN 201 or instructor permission. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

CHN 203. Second Year Chinese. 5 Credits.
Practices and expands learners’ language proficiency as well as cultural awareness and understanding. The third course of a three-course sequence of second year Mandarin Chinese language and culture, with a great emphasis given to improving effective communicative skills in both the written and spoken language and an understanding of the practices and products of Chinese culture. Prerequisite: CHN 202 or instructor permission. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

CHN 250. Chinese Culture. 3 Credits.
Chinese culture through films and music. Increase understanding of Chinese traditional and modern culture and society through analysis of cultural, historical and social issues by mass media and products. Explore concepts such as families, social roles, friendship, social values, morality, philosophies, economics, and more. Course conducted in English. Chinese materials presented in class will be subtitled in English. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

CIVIL MECH ENGINEERING TECH
CMET 110. Statics. 4 Credits.
Covers fundamental concepts of mechanics relating to forces acting on rigid bodies. Includes problems involving actions and reactions on structures and machines in two and three dimensions. Also covers friction, moments of inertia, and centroids. Corequisite: CMET 111. Prerequisite or concurrent: CMET 112. Prerequisites: MTH 60 and placement in WR 115. Department approval required. Audit available.

CMET 111. Engineering Technology Orientation. 4 Credits.
A rigorous practical approach to techniques and problems encountered in the field of engineering technology. Offers abundant opportunity to solve engineering problems. Corequisite: CMET 110. Prerequisite or concurrent: CMET 112. Audit available.

CMET 112. Technical Algebra/Trigonometry. 4 Credits.
Includes algebra and trigonometry used in CMET 110 and 111, emphasizing simultaneous linear equations, quadratic equations and applied problems. Prerequisites: MTH 60 and placement in WR 115. Department approval required. Audit available.

CMET 121. Strength of Materials. 4 Credits.
Covers the relationship between stress and strain on deformable solids. Applies analysis to members subjected to axial, bending, and torsional loads. Covers combined stresses, statically indeterminate systems and properties of structural materials. Prerequisites: CMET 110, CMET 112, and ENGR 102. Prerequisite/Concurrent: CMET 122 and 123.

CMET 122. Technical Engineering Physics. 4 Credits.
Introduces physical properties of matter and energy, includes properties of solids, liquids and gases. Presents applications of the basic equations of fluid mechanics, heat transfer, and the First Law of Thermodynamics. Prerequisite or concurrent: CMET 121, 123. Audit available.

CMET 123. Technical Algebra with Analytic Geometry. 4 Credits.
Covers algebra and geometry of special interest to engineering technicians including solving higher order equations, determinants, matrix operations, logarithms and trigonometric identities. Plane analytical geometry introduced in preparation for calculus, emphasizing development of skills and confidence to solve advanced pre-calculus problems. Prerequisite: CMET 112, or MTH 111. Audit available.

CMET 131. Applied Calculus. 8 Credits.
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. Audit available.

CMET 133. Materials Technology. 3 Credits.
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. Audit available.

CMET 211. Environmental Quality. 4 Credits.
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. Audit available.

CMET 212. Thermodynamics I. 4 Credits.
Covers principles of classical thermodynamics. Develops understanding of mass, energy, heat, work, efficiency, ideal and real thermodynamic cycles and processes. Teaches first and second law of thermodynamics, perfect gas law, properties of real gases, and the general energy equation for closed and open systems. Prerequisites: CMET 131, CMET 122 and CH 104. Audit available.

CMET 213. Fluid Mechanics. 3 Credits.
Covers properties, laws of fluid mechanics and energy relationships for incompressible fluids. Studies flow in closed conduits, including pressure loss, flow measurement, pipe sizing and pump selection. Includes open channel flow analysis. Recommended: CMET 131. Prerequisites: CMET 110, 122, 123 Audit available.

CMET 214. Surveying II. 3 Credits.
Presents techniques for preliminary location and construction surveys. Includes elements of horizontal and vertical location for roads, including circular and parabolic curves. Covers use of advanced capabilities of electronic total stations, include data logging. Prerequisite: ENGR 226. Audit available.
CMET 221. Environmental Systems. 3 Credits.
Explores ground water, air, hazardous waste, and water pollution problems. Presents data analysis techniques and computational methods. Examines technological solutions of these problems, including water, wastewater, and air pollution treatment, as well as alternatives. Prerequisites: CMET 123, WR 115. Audit available.

CMET 222. Thermodynamics II. 4 Credits.
Covers application of principles of thermodynamics in the analysis of vapor and gas power cycles, refrigeration and heat pump machinery, and air distribution systems. Combustion reactions, ideal gas mixtures, and properties of moist air (psychrometrics) are also studied. Prerequisite: CMET 212. Audit available.

CMET 223. Project Management. 3 Credits.
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: COMM 100 or COMM 111. Prerequisites: CMET 123. Prerequisite or concurrent: WR 121. Audit available.

CMET 226. Dynamics. 3 Credits.
Covers kinematics and kinetics principles relating to the motion of particles and rigid bodies. Examines force, mass, acceleration and velocity relationships. Practical linear and curvilinear motion problems are solved. Work-energy and impulse-momentum methods covered. Prerequisite: CMET 110, 131. Audit available.

CMET 227. Applied Electricity Fundamentals. 2 Credits.
Introduces fundamental principles of electricity as applied to mechanical systems. Principle topics covered: basic electrical theory, electric motors, controls, and energy consumption considerations. Prerequisite: CMET 112. Audit available.

CMET 228. Construction Materials. 3 Credits.
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 or concurrent: WR 121. Audit available.

CMET 233. CET Applied Computer Aided Design. 3 Credits.
Introduces fundamental principles of electricity as applied to mechanical systems. Principle topics covered: basic electrical theory, electric motors, controls, and energy consumption considerations. Prerequisite: CMET 112. Audit available.

CMET 237. MET Applied Computer Aided Design. 3 Credits.
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 or concurrent: WR 121. Audit available.

CMET 241. Structural Steel Drafting. 3 Credits.
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 121. Prerequisites: CMET 121, 122, 123, WR 115. Audit available.

CMET 242. Civil/Environmental Engineering Technology Seminar. 1 Credit.
Topics include information on finding employment in the civil/environmental engineering industry, writing resumes, and interviewing. Prerequisite: WR 115. Audit available.

CMET 280A. Cooperative Ed: Civil/Environmental Engineering Technology. 1-5 Credit.
An opportunity to develop engineering technology skills in a department-approved work setting. Department permission required. Audit available.

COLLEGE SUCCESS AND CAREER GUIDANCE

CG 100. College Survival and Success. 3 Credits.
Provides information and techniques for time, money and self-management, including motivation, goal setting, and accepting personal responsibility for college success. Includes developing skills for navigating a culturally diverse learning environment and utilizing college resources and services. Completion of CG 100 is equivalent to CG 101-102-103. Audit available.

CG 101. College Survival and Success: Personal Responsibility. 1 Credit.
Provides information and techniques for personal responsibility as a means for creating college success. Introduces developing skills for navigating a culturally diverse learning environment and utilizing college resources and services. First course in a series (CG 101-103). Completion of CG 101-102-103 is equivalent to CG 100. Audit available.

CG 102. College Survival and Success: Goal Setting. 1 Credit.
Provides information on the role of goal-setting as a means for creating college success. Continues to develop skills for navigating a culturally diverse learning environment and for utilizing college resources and services. Second course in the series (CG 101-103). Prerequisite: CG 101. Completion of CG 101-102-103 is equivalent to CG 100. Prerequisite: CG 101. Audit available.

CG 103. College Survival and Success: Self-Management. 1 Credit.
Focuses on the role of self-management as a means for creating college success. Continues to develop skills for navigating a culturally diverse learning environment and accessing college resources and services. Third course in a series (CG 101-103). Completion of CG 101-102-103 is equivalent to CG 100. Prerequisites: CG 101. Audit available.

CG 111A. Study Skills for College Learning. 3 Credits.
Provides information, techniques, and strategies helpful in becoming more efficient in studying, notetaking, textbook reading, and taking exams. Identify preferred learning style and develop skills in scheduling study time, library research, memory strategies, and critical thinking. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 111B. Study Skills for College Learning. 2 Credits.
Provides information, techniques, and strategies helpful in becoming more efficient in studying, notetaking, textbook reading, and taking exams. Assist with identification of preferred learning style and development of skills in scheduling study time and memory strategies. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 111C. Study Skills for College Learning. 2 Credits.
Provides information, techniques, and strategies helpful in becoming more efficient in studying, notetaking, textbook reading, and taking exams. Develop a study schedule. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 112. Managing Test Anxiety. 1 Credit.
Provides strategies to overcome barriers to effective test taking to improve overall test performance. Test preparation and test anxiety are examined. Audit available.

CG 114. Financial Survival for College Students. 1 Credit.
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. Introduces: funding college, budgeting, wise use of credit, controlling debt, basic financial planning, effective financial decision making, and avoiding financial mistakes and pitfalls. Prerequisites: Placement into WR 90, RD 90, and MTH 20 or equivalent placement test scores. Audit available.

CG 130. Today’s Careers. 2 Credits.
Explores a wide range of occupations including educational and skill requirements. Covers ways of gathering information about specific occupations. Includes guest speakers from a variety of careers to further illustrate the realities of the world of work. Audit available.

CG 130H. Introduction to Today’s Careers. Health. 2 Credits.
Explores career opportunities in the health professions. The focus will be on the educational and licensing requirements, professional and ethical responsibilities, physical requirements, workplace environment and career pathways of each profession. Audit available.
CG 140A. Career and Life Planning. 3 Credits.
This course provides students with the most in-depth tools needed to make informed career decisions. Students will assess career confidence and readiness, skills, values, interests, personality, obstacles, attitudes and approaches to decision making. This course provides instruction on how to research career information, gain access to information materials, and methods of exploring careers. Also included is educational decision making which covers choice of major and college as well as planning a program of study. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 140B. Career and Life Planning. 2 Credits.
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 and majors. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 140C. Career and Life Planning. 1 Credit.
This course provides students with the tools needed to make informed career decisions. Students will assess skills, values, interests, and personality toward making a career decision. The course provides instruction on how to research career information, gain access to information materials, and methods of exploring careers. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 144. Introduction to Assertiveness. 1 Credit.
Applies assertive communication skills to relationships both in personal and professional environments. Includes an overview of assertive communication and behavior and skill development in the areas of communication and personal conflict resolution. Audit available.

CG 145. Stress Management. 1 Credit.
Identifies specific personal stressors and develops skills that enable students to more effectively deal with stress. Audit available.

CG 146. Value Clarification. 1 Credit.
Examines beliefs, attitudes and values behind decisions and actions including whether behavior matches stated beliefs, evaluating consequences of choices and developing a process that will enable the development of personalized values. Audit available.

CG 147. Decision Making. 1 Credit.
Introduces the concept of decision making in both personal and professional environments. Includes an overview of goal setting and decision making models. Audit available.

CG 180. Intercultural Leadership for Mentees. 1 Credit.
Provides an opportunity for students from diverse cultural backgrounds to celebrate their cultural identity, develop educational goals and enhance their leadership skills. Includes college retention strategies, multi-cultural communication, diversity, team-building, community and environmental responsibility, critical thinking, problem solving, cultural awareness and self-reflection. Connects students with a mentor(s) through a series of interactive sessions. Course may be taken three times for credit. Prerequisite: Instructor permission.

CG 190. Intercultural Leadership for Mentors. 3 Credits.
Explores concepts of cross-cultural leadership and mentorship styles. Assists in the development of leadership and mentorship skills with the intent of supporting college success and retention of self and others. Includes team-building, goal-setting, role modeling, public speaking, time management, ethics, diversity, and customer service. Inspires the cultivation of a personal leadership vision and cross-cultural awareness, respect, and understanding. Course may be taken three times for credit. Requirement. Must pass a criminal background check if working with middle or high school students. Audit available.

CG 191. Exploring Identity and Diversity for College Success. 4 Credits.
Introduces the impact of diversity and social justice on human development as they relate to the experiences of college students. Explores different facets of identity development and how one’s culture impacts their college experience. Includes developing cultural competency and skills beneficial for success in college and in a diverse society. Prerequisite: Placement into WR 121. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

CG 209. Job Finding Skills. 1 Credit.
Explores broad range of job search techniques, including building a job network, compiling appropriate information for job applications, targeting cover letters and resumes, typical interview questions and techniques. Promotes overall understanding of the job search process. Audit available.

CG 225. Transfer to a Four Year College. 2 Credits.
Explores the planning of transferring to a four-year college. Includes the various processes, requirements, and issues that impact successful transitions. Provides strategies and information critical to academic development and adjustment to the four-year college system. Prerequisite: Placement into WR 115 and RD 115. Audit available.

CG 280A. CE: Career Development. 1-4 Credit.
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 Credit.
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 0693. Confidence Building. 1 Credit.
Helps students explore the concept of self-confidence: how it is learned, how it can be developed and how it is sabotaged. Ideas, tools and techniques are introduced that will help students in their development of a stronger self-image. Audit available.

COMM 100. Introduction to Communication. 4 Credits.
Covers complexities of the communication process. Includes insights into the causes and effects of general communication behaviors, involvement in active exploration of basic communication theories and concepts, and opportunities to develop communication strengths. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 101. Oral Communication Skills. 3 Credits.
Improve listening and speaking skills. Includes oral reports, conference procedures and everyday conversation. Audit available.

COMM 105. Listening, 4 Credits.
Emphasizes the processes understanding and appreciation of listening as an integral part of the communication process. Investigates and applies current research in listening theory. Analyzes and provides practice in the appropriateness and application of the major types of listening in academic, business, media and interpersonal contexts. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

COMM 110. Voice and Articulation. 3 Credits.
Present prepared and impromptu assignments with emphasis on understanding the vocal mechanism for production of Standard American speech while learning the International Phonetic Alphabet. Includes group or individual work designed to improve articulation, breathing, projection, expressiveness, and pronunciation. Audit available.

COMM 111. Public Speaking, 4 Credits.
Introduces speechmaking based primarily on a traditional public speaking approach. Covers classical rhetorical theory and highlights rhetoric’s importance to public speaking. Develops theoretical understanding and practical application of oral communication skills. Includes techniques in controlling speech anxiety, how to structure and organize information to present to a variety of audiences, and physical and vocal delivery skills. Prerequisite: MTH 20 or equivalent placement test score, and WR 121. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 111H. Public Speaking: Honors. 4 Credits.
An honors version of COMM 111. Introduction to speechmaking based primarily on a traditional public speaking approach. Aids students in developing theoretical understanding and practical application of oral communication skills. Also includes techniques in controlling speech anxiety, how to structure and organize information to present to a variety of audiences, and physical and vocal delivery skills. Prerequisite: 3.25 GPA, MTH 20 or equivalent placement test score, and WR 121. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
COMM 112. Persuasive Speaking. 4 Credits.
Explores theories of persuasive speaking and the nature of arguments. Develops skills of inquiry and advocacy through oral discourse, including critical analysis and rules of evidence. Includes practice in using, planning, delivering and reframing persuasive arguments in a variety of extemporaneous formats. Investigates how persuasion works to influence others as well as self. Prerequisites: MTH 20 or equivalent placement test score, and WR 121. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 130. Business & Professional Communication. 4 Credits.
Focuses on communication as it relates to business and professional settings. Explores the climates, settings, philosophies, and practices of organizational communication, including effective business presentations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

COMM 140. Introduction to Intercultural Communication. 4 Credits.
Explores the nature and impact of different cultures on communication. Includes interactive relationship forms as the basis for global understanding in the classroom, business or travel. Focus on processing messages with accelerating changes in political, economic and immigration patterns through individual cultural perceptions. Understand and communicate with people who are “different.” Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 212. Voice & Diction. 4 Credits.
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: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

COMM 214. Interpersonal Communication: Process and Theory. 4 Credits.
Introduces interpersonal communication in different contexts; focuses on message exchange in person-to-person interactions. Emphasizing theoretical principles and their application. Emphasizes the development of various communication skills in interpersonal contexts. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 215. Small Group Communication: Process and Theory. 4 Credits.
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. COMM 100 recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 227. Nonverbal Communication. 4 Credits.
Introduces the nonverbal aspect of communication as related to verbal communication. Emphasizes the importance of nonverbal aspects including influential factors such as: voice, body movement, eye behavior, touch, space, time, smell, and physical and social environments. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 228. Mass Communication and Society. 4 Credits.
Surveys media of mass communication and the effects on society. Introduces the history, development and technological advances of mass communication systems and their subsequent roles in society, public discourse and individual and cultural analysis of print and broadcast, advertising, public relations, television, film and new media. Course may be taken one time for credit as J201 or COMM228. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit Available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 229. Oral Interpretation. 3 Credits.
Oral interpretation of literature from the areas of prose, poetry and drama. Analyze specific literary works and communicate that understanding through performance. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

COMM 237. Gender and Communication. 4 Credits.
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 equivalent roles. Course fulfills block transfer and cultural diversity requirements and is transferable to state four-year colleges and universities. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMPUTED TOMOGRAPHY

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.

CTT 102. Cross-Sectional Anatomy- Head & Spine. 1 Credit.
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.

CTT 103. Cross-Sectional Anatomy- Neck & Thorax. 1 Credit.
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.

CTT 104. Cross Sectional Anatomy Review. 1 Credit.
Provides a comprehensive review of cross sectional anatomy of all body systems, review of anatomical landmarks and an understanding of normal versus abnormal anatomy and is a hybrid course – both classroom and online components. May be taken two times for credit. Department permission required. Prerequisites: CTT 103 or equivalent.

CTT 111. CT Physics, Equipment and Instrumentation. 2 Credits.
Introduces Computed Tomography theory and application, patient care, CT safety, imaging procedures, data acquisition and processing and the physical principles of image formation. Prerequisite: Department permission required.

CTT 112. CT Procedures, Protocols and Pathology Correlation. 2 Credits.
Emphasizes CT Protocol development, comparison of CT parameters, parameter tradeoffs, normal vs abnormal anatomy visualization and contrast media utilization. Prerequisite: Department permission required.

CTT 113. CT Registry Review. 1 Credit.
Provides a comprehensive review of patient care, imaging procedures, data acquisition and processing and physical principles of image formation for Computed Tomography. Prerequisites: RAD 254 or CTT 111 AND RAD 255 or CTT 112 or department permission.

CTT 271. CT Clinical Education I & S Credits.
Provides clinical education experience in an affiliated hospital or clinical CT department under the direct supervision of a registered technologist and radiologist. Includes the application of equipment use, manipulation and operation, CT imaging procedures, CT radiation safety and patient care. Requires attendance and clinical competencies, objectives, and performance assessments. Teaches skills that are required to function in the clinical area as a CT technologist, with a professional work ethic. May be repeated one time for credit. Prerequisite: (RAD 251 or CTT 103), (RAD 252 or CTT 101), RAD 253, and (RAD 254 or CTT 111).

CTT 272. CT Clinical II. 5 Credits.
Provides intermediate and advanced clinical education experience in an affiliated hospital CT imaging department under the supervision of a credentialed CT technologist and radiologist. Includes application of equipment manipulation and operation, CT imaging procedures, radiation safety, medicolegal and ethical protocols, record keeping and patient care. Requires attendance and completion of clinical competencies, objectives, and performance assessments. Teaches the necessary skills that are required to function in the clinical area as a CT technologist, with a professional work ethic. May be repeated one time for credit. Prerequisite: CTT 271 or RAD 270.
COURSE DESCRIPTIONS

COMPUTER AIDED DESIGN DRAFT

CADD 100. Drafting Orientation. 3 Credits.
Introduces product lines and manufacturing operations through visual media or facility tours, to become familiar with working conditions, with a possibility to converse with employees. Covers fundamentals of technical report writing, memos, resume development, internet research of technical products related to drafting and design, American National Standards Institute drafting practices and terminology. Introduces file management using Windows and PCC campus specific protocols. Audit available.

CADD 126. Introduction to AutoCAD. 3 Credits.
Introduces AutoCAD software as a design tool. Covers the operation of both CPU hard drive and USB drive data storage, and plotting. Covers creation, retrieval and modification of drawings that meet industry standards using basic AutoCAD commands. Audit available.

CADD 136. Intermediate AutoCAD. 3 Credits.
Continues the study of AutoCAD software as a design tool. Covers slide files, block attributes, user coordinate systems, v-views, 3-D entity creation, external references, and paper/model space drawing manipulation. Prerequisite: CADD 126. Audit available.

CADD 160. Drafting Fundamentals. 4 Credits.
Covers advanced editing and modeling options, configurations of assemblies; generate dimensioned layouts; and Bill of Materials of those parts and assemblies. Audit Available.

CADD 165. Intermediate Drafting. 4 Credits.
Continues material presented in CADD 160. Introduces geometric construction, fasteners, keys, and keyways, surface finish, and tolerances. Prerequisite: CADD 160. Audit available.

CADD 175. SolidWorks Fundamentals. 3 Credits.
Introduces SolidWorks software as a 3-D design tool. Covers creation, retrieval and modification of 3-D and layout drawings using basic SolidWorks commands. Includes skills needed to create parametric models of parts and assemblies; generate dimensioned layouts; and Bill of Materials of those parts and assemblies. Audit Available.

CADD 185. Inventor Fundamentals. 3 Credits.
Introduces Inventor as a feature-rich, parametric 3D design tool for assembly-centric modeling and collaborative engineering. Includes part and assembly modeling, using adaptive features and parents, utilizing work groups, surfacing basics, managing data, and the Engineer’s Notebook. Audit available.

CADD 246. AutoCAD 3-D and Solid Modeling. 3 Credits.
Introduces 3-Dimensional drafting and design procedures. Examines concepts including 2D and 3D primitives, User Coordinate Systems, 3D views, complex extrusions, regions, shading and rendering, 3D solid models, and support AutoCAD 3D databases. Prerequisite: CADD 136. Audit available.

CADD 255. Cinematics Drafting. 3 Credits.
Introduces mechanisms that translate motion and force, including cams, gears, belts/pulleys and chains/sprockets. Includes components such as pawls, ratchets, linkages and levers. Includes drawings of stock (shelf) items and custom designs. Prerequisite: CADD 165, CADD 136. Audit available.

CADD 256. Advanced AutoCad. 3 Credits.
Examines customization of AutoCAD menu and Lisp files. Includes buttons, POP, image, screen and tabulation sections, creation and implementation of user-defined AutoLISP functions, and basic file management techniques. Prerequisite: CADD 136. Audit available.

CADD 265. Advanced Drafting. 4 Credits.
Introduces working drawings, including assemblies and details, weldments, drawing numbering systems and revisions. Reviews CADD 165 tolerancing and fits and surface finishing. Prerequisite: CADD 165. Audit available.

CADD 275. SolidWorks Advanced. 3 Credits.
Covers advanced editing and modeling options, configurations of assemblies, sheet metal, and topdown assembly modeling. Prerequisite: CADD 175. Audit available.

CADD 285. Advanced Inventor. 3 Credits.
Covers advanced techniques used in creating and modifying parametric, assembly-centric 3D models with 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 CADD 185; or department permission. Audit available.

COMPUTER APPLICATIONS SYSTEMS

CAS 101. Introduction to Website Development & Design. 1 Credit.
Introduces the creation of graphics for use on websites using industry-standard graphics editing software. Includes creating vector-based and pixel-based graphics, optimizing images for websites, selecting appropriate image file formats, and performing basic photo editing skills. Recommended: placement into RD 115 and WR 115. Audit available.

CAS 111D. Beginning Website Creation: Dreamweaver. 3 Credits.
Introduces basic elements of website creation using Adobe Dreamweaver. Includes web terminology, basic HTML, uploading pages to a server (FTP), site management, tables, layout, stylesheets (CSS), rollovers, optimizing graphics, and accessibility. Recommended: CAS 110 and CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

CAS 111E. Beginning Website Creation: Expression Web. 3 Credits.
Introduces basic elements of website creation using Microsoft Expression Web. Includes web terminology, basic X-HTML, uploading pages to a server (FTP), site management, tables, layout, stylesheets (CSS), rollovers, optimizing graphics, and accessibility. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

CAS 118. Beginning Photoshop. 3 Credits.
Introduces the creation of professional graphic images using Adobe Photoshop, Camera Raw and Bridge. Includes image resolution, file formats, copyright issues, and using various tools and features. Recommended: CAS 133 or equivalent file management skills. Audit available.

CAS 121. Beginning Keyboarding. 3 Credits.
Introduces the alphabetic portion of computer keyboard by touch. Uses the numeric portion of the keyboard. Develops and improves basic keyboarding techniques to increase speed and accuracy. Involves production of basic business and academic documents using a word processor. Recommended: Placement into RD 90 and WR 90 or above. Audit available.

CAS 121A. Beginning Keyboarding. 1 Credit.
Introduces the alphabetic portion of computer keyboard by touch. Develops and improves basic keyboarding techniques. Recommended: Placement into RD 90 and WR 90 or above. Audit available.

CAS 122. Keyboarding for Speed and Accuracy. 3 Credits.
Develops confidence, endurance, and control for accurate keyboarding while increasing keyboarding speed. Develops ability to proofread documents accurately and efficiently. Keying by touch is essential. Recommended: Placement into RD 90 and WR 90 or above. Audit available.
CAS 123. Production Keyboarding. 3 Credits.
Develops rapid and accurate touch and pre-reading of business letters, memos, reports, and tables. Improves and increases speed and accuracy of keyboarding skills. Recommended: Placement into RD 115 and WR 115 or higher, OS 220, and keying 45 wpm by touch. Prerequisite: CAS 216 or instructor permission. Audit available.

CAS 133. Basic Computer Skills/Microsoft Office. 4 Credits.

CAS 135. Keeping Your Computer Healthy. 3 Credits.
Practical computer course demonstrating ways of using a Windows computer effectively, and maintaining it to operate smoothly, efficiently and securely. Explores issues such as protection from viruses, spyware and adware; data backup and recovery; organizing your files; connecting to the Internet; setting up a home network; customizing your Windows interface; installing/uninstalling software; speeding up Windows; maintaining and optimizing your PC to run at its best. Ideal for personal use or small business owners. Recommended: RD 115 or WR 115 and CAS 133. Audit available.

CAS 137. Basic Web Design Skills/Adobe. 3 Credits.
Introduces the basic features of Adobe Creative Suite, producing a simple, multi-page website using Dreamweaver, Photoshop, Flash, Fireworks, Bridge, and Acrobat. Develops familiarity with the web design process. Includes basic web terminology, uploading pages to a server (FTP), and optimizing graphics. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

CAS 140. Beginning Access. 3 Credits.
Introduces the basic features of Microsoft Access. Covers beginning database management concepts including tables, forms, reports, queries, and basic macros. Stresses a working knowledge of database management vocabulary. Emphasizes efficient use of Access toolbars and menus. Discusses database design issues. Recommended: Placement into RD 115 and WR 115. Audit available.

CAS 150. Introduction to Speech Recognition. 1 Credit.
Use Speech Recognition software to input information into the computer. Students will train the software to his/her voice and learn voice commands to edit, format, and produce documents. Computer literacy required. Recommended: CAS 133 and placement into RD 80. Audit available.

CAS 151. Microsoft Outlook. 1 Credit.
Introduces the basic features of Microsoft Outlook to send and receive e-mail, organize schedules and events, and maintain Contacts lists, to-do lists, and tasks. Emphasizes the Outlook skills necessary in business environments. Recommended: Placement into RD 115 and WR 115. Audit available.

CAS 170. Beginning Excel. 3 Credits.
Introduces the basic features of Microsoft Excel and spreadsheet concepts to design and create accurate professional worksheets for use in business and industry, and academic environments. Includes entering data; creating formulas; professional formatting; creating charts; creating, sorting, and filtering lists; creating and using templates; and working with functions. Focuses on ways to ensure accuracy including proofreading techniques and critical thinking to determine what data to present and how to present it. Recommended: Placement into RD 115, WR 115 and MTH 20. Audit available.

CAS 170A. Beginning Excel. 1 Credit.
Introduces the basic features of Microsoft Excel. Includes moving around the spreadsheet, entering data, formatting, and printing. Stress a working knowledge of spreadsheet vocabulary. Recommended: Placement into RD 115 and WR 115. Audit available.

CAS 171. Intermediate Excel. 3 Credits.
Introduces advanced features of Excel to design and create accurate, professional worksheets for use in business and industry. Includes financial, logical, statistical, lookup, and database functions; pivot tables; "what-if" analysis with data tables; importing data; complex graphs; macros; and solver features. Focuses on ways to ensure accuracy including proofreading techniques and critical thinking to determine what data to present and how to present it. Prerequisite: CAS 170 or instructor permission. Audit available.

CAS 175F. Introduction to Animation: Flash. 3 Credits.
Introduces the Adobe Flash for creating and editing animated movies and graphics. Covers shape and motion tweening, masks, symbols, and basic ActionScripting. Emphasizes using the Flash interface efficiently. Recommended: CAS 110 and CAS 133 or equivalent file management and word processing experience, placement into RD 115 and WR 115. Audit available.

CAS 180. Search Engine Optimization-SEO. 3 Credits.
Introduces the techniques necessary to elevate your website to the number one position in a search through the use of up-to-date concepts for optimizing the searchableability of web pages on the Internet. Introduces the creation of a tailored Search Engine Optimization (SEO) strategy, including on-page and off-page search engine optimization, META data research and analysis, traffic generation, online tools and SEO software. Covers client side SEO. Prerequisite: CAS 111D or CAS 111E or CAS 206 or instructor permission. Audit available.

CAS 181. Web Site Creation using CMS - Content Management Systems. 3 Credits.
Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using a Content Management System (CMS), such as Joomla or Drupal. Includes installing and modifying templates, creating efficient site navigation using menus, organizing a site using components and modules, enhancing a site with plugins and extensions, and creating user functionality with user logins. Recommended: CAS 111D, CAS 206, and CAS 215, placement into RD 115 and WR 115. Audit available.

CAS 181D. CMS Website Creation: Drupal. 3 Credits.
Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using Drupal, a Content Management System (CMS). Includes setting up a Drupal website in a remote server environment, working with modules, creating efficient site navigation using menus, and organizing a site using components, blocks, nodes, content types and fields. Also includes enhancing a site with additional content types, modules and themes, and creating user functionality with user logins. Prerequisite: CAS 215 or instructor permission. Recommended: CAS 111D and CAS 206; placement into RD 115 and WR 115. Audit available.

CAS 181J. CMS Website Creation: Joomla. 3 Credits.
Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using Joomla, a Content Management System (CMS). Includes setting up a Joomla website in a remote server environment, working with modules, creating efficient site navigation using menus, organizing a site using components, enhancing a site with plugins and extensions, and creating user functionality with user logins. Recommended: CAS 111D, CAS 206, and CAS 215; placement into RD 115 and WR 115. Audit available.

CAS 181W. CMS Website Creation: WordPress. 3 Credits.
Introduces the creation of sophisticated, dynamic, interactive and fully functional websites using WordPress, a Content Management System (CMS). Includes installing and modifying templates, creating efficient site navigation using menus, organizing a site using components, enhancing a site with plugins, creating a blog, and creating user functionality with user logins. Recommended: CAS 111D, CAS 206, and CAS 215; placement into RD 115 and WR 115. Audit available.

CAS 206. Principles of HTML. 4 Credits.
Introduces HTML using an HTML editor. Includes web terminology, HTML5, uploading pages to a server (FTP), site management, links, lists, tables, forms, working with web graphics, accessibility, and introduction to stylesheets (CSS). Includes creating a multi-page website using these technologies. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Prerequisite/concurrent: CAS 110. Audit available.

CAS 213. JavaScript and JQuery for Designers. 4 Credits.
Develops skills to find, utilize and modify JavaScript and JQuery resources on the Internet. Explores ways to make a web site come alive with a variety of interactive effects such as displaying and hiding text or images, filling out form fields automatically, creating interactive maps or calendars, and creating beautiful DHTML windows. Prerequisite: CAS 215 or instructor permission. Audit available.

CAS 214. Beginning ColdFusion/CFML. 4 Credits.
Introduces dynamic websites that run on ColdFusion or one of its Open Source competitors. Explores CFML, a simplified tag-based coding language which dramatically reduces development time. Covers server-side techniques such as responding to data submitted from forms, passing information between web pages, retrieving information from a database, managing sessions, and displaying text/images on the screen in response to user requests. Includes creation of dynamic E-Commerce or business websites using CFML. Recommended: CAS 206, CAS 213, CAS 215, and CIS 122 or equivalent; placement into RD 115 and WR 115. Audit available.
COURSE DESCRIPTIONS

CAS 215. Cascading Style Sheets - CSS. 4 Credits.
Introduces cascading style sheets (CSS) that format web pages according to industry and accessibility standards, work in multiple browsers, and separate content from presentation. Includes creating interactive websites using CSS and CSS3. Recommended: CAS 206, CAS 111D or equivalent HTML coding skills; placement into RD 115 and WR 115. Audit Available.

CAS 216. Beginning Word. 3 Credits.
Introduces the basics of Microsoft Word to 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 and WR 115; keyboarding 25 words per minute. Audit available.

CAS 216A. Beginning Word. 1 Credit.
Introduces the basics of Microsoft Word to create, edit, and print basic documents such as letters and memos and become familiar with the program's writing tools. Recommended: Placement into RD 115 and WR 115; keyboarding 25 words per minute. Audit available.

CAS 217. Intermediate Word. 3 Credits.
Introduces intermediate and advanced features of Microsoft Word to enhance documents through special formatting features such as graphic lines and images, Word Art, and clipart; work with headers and footers in multi-page documents; create and format tables; use advanced merge; create documents with newspaper and column, and create and use fill-in forms. Recommended: Placement into RD 115 and WR 115. Prerequisite: CAS 216 or instructor permission. Audit available.

CAS 220. Project Management - Beginning MS Project. 3 Credits.
Introduces MS Project, including building entry tables, generating reports, resolving resource and time conflicts, importing data, and tracking budgets. Includes the design and creation of accurate Gantt charts for use in project management. Recommended: Placement into RD 115 and WR 115; experience with project management or MSD 279; working knowledge of Windows and file management. This course is part of the Project Management series of classes that includes MSD 279, BA 255, and CIS 245. Audit available.

CAS 222. Intermediate Website Creation. 3 Credits.
Introduces intermediate and advanced practices for creating professional, interactive websites. Focuses on website features designed for user interactivity, including functional forms, style sheets for mobile devices, pull-down menus, audio and video elements, e-commerce, and JavaScript functions. Includes the use of a website creation tool, such as Adobe Dreamweaver. Includes code-lifting of existing JavaScript functions and binding XML files to web pages. Introduces the use of JavaScript and server-side scripts for non-programmers. Includes techniques for optimizing website performance. Prerequisites: CAS 111D or CAS 206. Recommended: CAS 215. Audit Available.

CAS 225. PHP and MySQL for Designers. 4 Credits.
Develops skills for accessing, utilizing and modifying PHP and MySQL resources on the Internet. Explores ways to personalize web sites for visitors with a variety of dynamic server-based techniques such as processing forms, displaying text or images from a database, implementing a shopping cart or a discussion board, tracking visitors, and password-protecting a web site. Includes how to install PHP and MySQL. Prerequisite: CAS 213 or instructor permission. Audit available.

CAS 231. Publisher. 3 Credits.
Introduces Microsoft Publisher to design and create effective publications that combine text graphics, illustrations, and/or photographs such as announcements, flyers, advertisements, and reports. Covers the processes to create, import, and manipulate text, graphics, and/or templates through program tools and features. Recommended: Placement into RD 115 and WR 115; prior knowledge and use of Windows technology. Audit available.

CAS 232. Desktop Publishing: InDesign. 3 Credits.
Introduces Adobe InDesign, a desktop publishing software, to design and create effective publications such as announcements, flyers, advertisements, and reports. Covers the processes to create, import, and manipulate text and/or graphics through use of software features. Recommended: Placement into RD 115 and WR 115 and prior knowledge and use of Windows technology and CAS 216. Audit available.

CAS 242. Web Workflow and Mockups. 3 Credits.
Introduces the workflow for creating websites; beginning with the creation of web page mockups using industry-standard image editing software, then taking the mockups and producing HTML and CSS web pages that display accurately on any web-supported device. Includes the creation of transparent images, vector graphics, text, and images that display on all devices. Covers web standards for color management, design principles, and usability best practices. Audit available. Prerequisites: CAS 110, CAS 206. Prerequisites/concurrent: CAS 215.

CAS 246. Integrated Computer Projects. 4 Credits.
Builds upon previous computer and business knowledge to create individual and group projects using software found in today's workplace. Uses integrated software (i.e. MS Office) and current technology to further develop professional software skills. Prerequisite: CAS 216 and CAS 170 or instructor permission. Recommended: CAS 109, CAS 140, CAS 171, and CAS 217. Audit available.

CAS 275. Intermediate Flash. 3 Credits.
Continues to explore Flash concepts to create a Flash-based website and work on complex animations and effects. Includes working with frame labels, nested movie clip symbols, some ActionScript to support website creation and the incorporation of video and audio. Recommended: CAS 111D or CAS 111E or CAS 206 or equivalent. Prerequisite: CAS 175 or instructor permission. Audit available.

CAS 280W. Cooperative Education: Web Site Development. 1-4 Credits.
Provides field experience for students related to web site development. Recommended: Satisfactory progress through two terms of web site classes or equivalent experience. Audit available.

CAS 285. Capstone for Website Development/Design. 3 Credits.
Encompasses producing a dynamic web project using industry standard software and technical tools. Includes planning, production, project review, and peer critiques. Includes completion of an online portfolio showcasing coursework artifacts from all completed courses. Includes development of a self-marketing statement emphasizing student web focus area. Prerequisite: Department Approval Required.

COMPUTER INFORMATION SYSTEMS

CIS 120. Computer Concepts I. 4 Credits.
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. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

CIS 121. Computer Concepts II. 4 Credits.
Covers evaluation, selection and application of computer technology to solve practical problems in database design, web page design, networking and programming. Addresses ethical issues associated with technology. Prerequisites: CIS 120 or instructor permission; WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

CIS 122. Software Design. 4 Credits.
Covers software design as part of the software development life cycle. Includes basic logic constructs, testing programs, use case descriptions, modularity and an introduction to object design. Provides examples of well-designed software projects. Additional lab hours may be required. Recommended: CIS 120 or CAS 133 or BA 131. Prerequisites: WR 115, RD 115, MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

CIS 125D. Database Application Development I. 4 Credits.
Concepts of a client-based relational database management system (RDBMS) and application of such systems to the business environment. Topics include database management issues, database design, creating and maintaining databases, creating forms, queries and reports. Design, create and maintain a database system. Recommended: CIS 121 or instructor permission. Audit available.

CIS 133B. Introduction to Visual Basic.NET Programming. 4 Credits.
Introduces design, implementation and testing of software using Visual Basic.NET. Includes how to write Visual Basic.NET programs that solve practical, real world, business-oriented problems. Uses object oriented design techniques. Prerequisite: CIS 122 or instructor permission. Audit available.

CIS 133J. Java Programming I. 4 Credits.
Covers design, implementation and testing software using Java. Introduces how to write Java programs that solve practical, real world, business-oriented problems using object-oriented design techniques. Prerequisite: CIS 122. Audit available.
COURSE DESCRIPTIONS

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CIS 133N. Introduction to Programming Using C#.NET. 4 Credits.
Introduces design, implementation and testing of software using C#.NET. Includes how to write C# programs that solve practical, real world, business-oriented problems. Uses object oriented design techniques. Prerequisite: CIS 122 or instructor permission. Audit available.

CIS 133W. JavaScript for Web Developers. 4 Credits.
Covers fundamental programming concepts to build practical, real-world web applications using JavaScript. Covers building websites that handle user events to manipulate page content on-the-fly, opening the door to a plethora of dynamic techniques that only JavaScript can provide. Includes an introduction to jQuery. Prerequisites: CIS 122 or instructor permission. Audit available.

CIS 135A. Application Development with Agile/Scrum. 4 Credits.
Introduces core concepts of Agile development and Scrum in the software development life cycle. Compares Agile to the more popular waterfall approach of software development. Introduces topics for working in an Agile environment as a Scrum Developer, Scrum Master or Scrum Product Owner, the entire Scrum process and artifacts. Additional lab hours may be required. Prerequisites: CIS 120, CIS 122 or instructor approval. Audit available.

CIS 135D. Database Application Development II (VBA). 4 Credits.
Design, development and implementation of a complete database application using Visual Basic for Applications (VBA). Covers Access Object Model, user interfaces, object variables, ADO automation, databases on a server, and COM add-ins. Thorough documentation and structured programming techniques will be emphasized. Recommended: CIS 133B or CIS 125D or instructor permission. Audit available.

CIS 135M. Mobile Application Programming. 4 Credits.
Covers building mobile applications using existing programming languages such as JavaScript, Java, PHP, and third party mobile application development tools. Includes developing simple applications that could run on mobile devices. Covers mobile devices appliance development phases, terminologies, application design, and coding. Sharpens programming skills in application development. Prerequisite: CIS 122. Audit available.

CIS 135T. XML and HL7. 4 Credits.
Presents design and creation of basic XML documents, namespaces, validation of an XML document using DTDs (Document Type Definitions) and schemas, importing and including XML schema domain information, XML schema intrinsic and user-defined data types, and combining XML with XHTML and Cascading StyleSheets. Discusses the advantages and disadvantages of XML design formats of Flat Catalog, Russian Doll and Venetian Blind. Introduces HL7. Recommend: CIS 122 or instructor permission. Audit available.

CIS 140D. Operating System: Microcomputers. 4 Credits.
Provides the basic concepts of Linux and Windows operating systems. Includes basic operating system functions, file/folder management, disk partitioning and formatting, operating system and application installation, and system configuration. See www.pcc.edu/cis. Recommended: CIS 120 or instructor permission. Audit available.

CIS 140M. Operating Systems I: Microsoft. 4 Credits.
A first course in Microsoft operating systems administration including installation, configuration, and management. Command line and GUI tools used to organize, manage and maintain the file system are covered. Additionally students are introduced to users, groups, printing, profiles policies and the registry. Recommended: CIS 120 Audit available.

CIS 140S. Perl Script Programming. 1 Credit.
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 CIS 140U or equivalent. Audit available.

CIS 145. Microcomputer Hardware and Troubleshooting. 4 Credits.
Students will learn to identify, remove, and install standard components of a PC style microcomputer, including motherboards, CPUs, RAM, hard drives, removable media drives and power supplies. Additional topics include BIOS, CMOS, the boot process, video displays, printers, and home networking. Audit available.

CIS 178. Applied Internet Concepts. 4 Credits.
Introduces the Internet from a user’s perspective, with emphasis on productive, professional access. Topics include how to connect to the Internet, how to communicate with others, how to find and share information productively, as well as educational, business and social issues related to the Internet. Recommended: CIS 120 or instructor permission. Audit available.

CIS 179. Data Communication Concepts I. 4 Credits.
Provides basic concepts of data communications, networking and connectivity. Explores hardware, connectivity, signaling, addressing, network topologies, communication protocols, network designs, switching, management, TCP/IP protocols, security and standards with emphasis on the OSI reference model. Prerequisite: CIS 120 or CIS 121 or EET 111 or instructor permission. Audit available.

CIS 187L. Web Technical Administration. 4 Credits.
Internet connections, file transfers, e-mail notifications, and security systems. Investigates web system logs, web content backup strategies, and issues of web user accessibility and web site performance. Linux and Windows server operating system installations, configuration, and management in a virtual environment will be required. Command line commands and GUI tools will be used to organize, manage, and maintain the file system and web server software. Recommended: CIS 121 and CIS 122 or instructor permission. Audit available.

CIS 188. Introduction to Wireless Networking. 4 Credits.
Introduces 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. Prerequisite: CIS 179, or instructor permission. Audit available.

CIS 189. Wireless Security. 4 Credits.
Introduces wireless security intrusion, policies, tools, and solutions. Prerequisite: CIS 179 or instructor permission. Recommended: CIS 188. Audit available.

CIS 195P. PHP Web Development I. 4 Credits.
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. Prerequisite: CIS 122. Audit available.

CIS 225. End User Support. 4 Credits.
Prepares computer professionals 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, troubleshooting and providing ongoing technical support. Prerequisites: CIS 120 or instructor permission. Audit available.

CIS 233B. Intermediate Visual Basic.NET Programming. 4 Credits.
Utilizes Visual Basic.NET to access streams and relational databases. Includes how to follow UML diagrams to create objects, arrays and collections that solve advanced, real world, business oriented problems. Introduces building an interactive web page using ASP.NET. Includes writing test plans to evaluate software quality. Continues use of object oriented design techniques. Prerequisites: CIS 133B. Prerequisite/concurrent: CIS 275 or instructor permission. Audit available.

CIS 233J. Java Programming II. 4 Credits.
Covers the use of Java to access databases and files including XML. Includes creating collections and arrays and using inheritance in Java programs. Prerequisites: CIS 133J. Prerequisite/concurrent: CIS 275. Audit available.

CIS 233N. Intermediate C#.NET Programming. 4 Credits.
Utilizes C#.NET to access streams and relational databases. Includes how to follow UML diagrams to create objects, arrays and collections that solve advanced, real world, business oriented problems. Introduces building an interactive web page using ASP.NET. Includes writing test plans to evaluate software quality. Continues use of object oriented design techniques. Prerequisites: CIS 133N. Prerequisite/concurrent: CIS 275 or instructor permission. Audit available.

CIS 233S. Internet Web Page Scripting. 4 Credits.
Provides the foundation to build real-world, browser independent, web applications using client-side technologies including HTML, DHTML, Cascading StyleSheets and Javascript. Although the primary focus is on W3C Standards, Internet Explorer and Netscape specific extensions are discussed. A functioning website is built using the content presented in the course. Recommended: Proficiency in a modern programming language (CIS 133B, 133J or CS 161); or instructor permission. Audit available.

CIS 233W. JavaScript for Web Developers II. 4 Credits.
Covers advanced programming concepts to build practical, real-world web applications using JavaScript, AJAX, and Query. Covers Object-Oriented Design and Programming, User Interface (UI) design and implementation, and communicating with a web server back-end. Covers using these techniques to create dynamic, interactive web applications, as well as the language-specific details needed to implement them in JavaScript. Prerequisites: CIS 133W. Audit available.
CIS 234E. Advanced Visual Basic.NET Programming. 4 Credits.
Continues the Visual Basic.NET Programming sequence utilizing relational database access, multiple document interface and software objects and classes. Structured design techniques emphasized throughout. Recommended: CIS 233B, 275; or instructor permission. Audit available.

CIS 234C. Advanced C#.NET Programming. 4 Credits.
Continues the C#.NET Programming sequence utilizing relational database access, multiple document interface and software objects and classes. Emphasizes structured design techniques throughout. Prerequisites: CIS 233C, CIS 275; or instructor permission. Audit available.

CIS 234J. Java Programming III. 4 Credits.
Learn to use Java/J2EE to build scalable n-tiered web applications. Covers servlets, JSP, JDBC database connectivity, Enterprise JavaBeans, and SOAP Web Services Technologies. Learn advanced Apache Tomcat web server configuration including how to secure web resources, authenticate users and mask URLS. Recommended: CIS 233J or instructor permission. Audit available.

CIS 234N. C# Programming. 4 Credits.
Presents an accelerated introduction to object-oriented programming in C# focusing on language features supported by .NET frameworks using the Visual Studio IDE and NUnit. Includes design, code and test projects involving namespaces, simple, abstract anonymous and partial classes; structures, enums and interfaces; delegates and events; exceptions; class, instance and anonymous methods, properties and indexes; LINQ, streams, generic collections, AD0, timers, and multithreading. Recommended: Experience with UML class diagrams, object-oriented concepts and a two-course sequence (or proficiency) in an object-oriented programming language. Audit available.

CIS 234S. Web Application Development Using.NET. 4 Credits.
Provides the necessary knowledge to create real-world web applications using server-side technologies, including ASP.NET, VB.NET, and database access with ADO.NET. Although the primary focus is on the concepts, a business web-site is developed utilizing the presented material. Recommended: CIS 233S. Audit available.

CIS 235W. Introduction to Web Analytics. 4 Credits.
Focuses on the collection and analysis of user web traffic data for the optimization and monetization of web sites. Covers the content and format of web server logs, and techniques for enriching this data using cookies, Javascript, and user registration. Illustrates how web content can be aggregated by type and used to create saleable inventory for generating ad revenue. Shows how web metrics can be used to determine web site stickiness, effective content on the site, and to identify and fix navigational bottlenecks that cause user churn. COS 180 is recommended prior to taking this course. Prerequisites: CIS 122 or instructor permission. Audit available.

CIS 240L. Linux Installation and Configuration. 4 Credits.
Introduces the administration of systems utilizing the Linux operating system. Focuses on knowledge and skills necessary for day-to-day operations on a Linux system using the command line. This is the first course of a two course sequence. Prerequisite: CS 140U or instructor permission. Audit available.

CIS 240M. Managing a Windows Server Environment. 4 Credits.
The first of a three-term sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing Microsoft’s Windows operating system. The course focuses on the knowledge and skills necessary to design, install, configure and manage a workgroup or domain consisting of Microsoft Windows servers and workstations. Recommended: CIS 140M. Audit available.

CIS 243. E-essentials of E-Commerce Information Systems. 4 Credits.
Encompasses the multi-faceted aspects of e-commerce information systems. Combines study of network, database and programming concepts with hands on skills. Provides a framework for the analysis of information system based e-commerce solutions to issues surrounding B2B, B2C, and intra-organizational trade. Provides a solid background in critical issues and technologies related to e-commerce. Recommended: CIS 120 and one programming class or instructor permission. Audit available.

CIS 244. Systems Analysis. 4 Credits.
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. Prerequisite: Project Management. Recommended: One class in a high-level programming language and WR 227. One 200-level business administration course. Additional lab hours may be required. Audit available.

CIS 245. Project Management. Information Systems. 4 Credits.
Study practical approaches to 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, MS 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. Audit available.

CIS 246. Structured Systems Design. 4 Credits.
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. Audit available.

CIS 275. Data Modeling and SQL Introduction. 4 Credits.
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 client/server and database administrator). Audit available.

CIS 276. Advanced SQL. 4 Credits.
Focuses on design, development and implementation of SQL programming for all types of relational database applications including client/server and Intranet 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. Audit available.

CIS 277D. Database Security. 4 Credits.
Covers all aspects of securing a database. Uses Oracle database security to explain concepts in a 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. Audit available.

CIS 277H. Health Informatics Environment Simulation. 4 Credits.
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. Audit available.

CIS 2770. Advanced Database Concepts in Oracle. 4 Credits.
Covers concepts with Oracle including PL/SQL programming concepts review. Includes design considerations for PL/SQL program units and packages. Advanced interface methods, features for PL/SQL, performance and tuning, and advanced features of Oracle supplied packages also covered. Recommended: CIS 276. Audit available.

CIS 2777. Web Business Intelligence Application Development. 4 Credits.
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 DMML. Covers fundamentals of Web Business Intelligence reporting and Web User Interface development. Recommended: CIS 276 and equivalent database experience.

CIS 278. Data Communication Concepts II. 4 Credits.
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. Includes configuring operating Cisco routers and other data communication equipment in order to build functional networks. Prerequisite: CIS 179, or instructor permission. Audit available.

CIS 279L. Linux Network Administration. 4 Credits.
Second of a two term sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing the Linux network operating system. Covers networking, TCP/IP, DNS, DHCP, NFS, Samba. Prerequisite: CIS 240L or instructor permission. Audit available.
CIS 284. Network Security. 4 Credits.
Continues exploring the role of network administrator. 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. Emphasizes the use of Open Source software and CompTIA’s Security+ content. Prerequisite: CIS 240M or CIS 279L or instructor permission. Audit available.

CIS 285. Security Tools. 4 Credits.
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 264 Audit available.

CIS 286. Computer Forensics. 4 Credits.
Introduces computer security professionals to computer forensics. Includes 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. Includes maps to the IACIS certification. Prerequisite: CS 140U and either CIS 240L or CIS 240M, or instructor permission. Audit available.

CIS 287L. Web Server Administration. 4 Credits.
Provides systems administrators with the knowledge and skill sets to install, configure, implement, and manage a web server running Windows server or Unix/Linux operating system (does not cover publishing web page content). Prerequisites: CIS 240M or CIS 240L or instructor permission. Audit available.

CIS 287M. Microsoft Server Security. 4 Credits.
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 remote access. Focuses on Windows Server with some client content. Prerequisites: CIS 240M or instructor permission. Audit available.

CIS 287X. Microsoft Exchange Management. 4 Credits.
Covers preparation for an entry-level position as a systems administrator for a network utilizing Microsoft Exchange Server for email administration. Focuses on the knowledge and skills necessary to design, install, configure and manage a Microsoft Exchange Server email system. Prerequisite: CIS 240M or instructor permission. Audit available.

CIS 288M. Microsoft Network Administration. 4 Credits.
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 Windows 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 288M may be taken concurrently. Audit available.

CIS 289M. Microsoft Active Directory Administration. 4 Credits.
Third of a three-term sequence designed to prepare students for an entry-level position as a system administrator of a network utilizing Microsoft’s network operating system. Focuses on the knowledge and skills necessary to design, install, configure, and administer an enterprise network using Microsoft Windows Active Directory. Also focuses on implementing Group Policies and understanding Group Policy tasks required to centrally manage users and computers. Recommended: CIS 240M, or instructor permission. CIS 288M may be taken concurrently. Audit available.

CIS 295P. PHP Web Development II. 4 Credits.
Introduces the advanced capabilities and features of PHP for Web site development. Includes 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. Prerequisite: CIS 195P. Prerequisite/ Concurrent: CIS 275. Audit available.

COMPUTER SCIENCE

CS 133G. Introduction to Computer Games. 4 Credits.
Introduces fundamentals of computer game development, including a survey of computer game categories and platforms, major game components, the game development process, and game graphics. Design and development of elementary two-dimensional computer games. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math; Computer Science/AAS, Science, Math, Computer Science/AGS.

CS 133U. C Programming. 4 Credits.
Introduces computer programming through development of C programs to solve practical problems. Recommended: CS 160. Audit available.

CS 140U. Introduction to UNIX. 4 Credits.
Introduces the UNIX/Linux operating system, including: task scheduling and management, memory management, input/output processing, internal and external commands, shell configuration, and shell customization. Explores the use of operating system utilities such as text editors, electronic mail, file management, scripting, and C/C++ compilers. Discusses trends in UNIX/Linux, including use of graphical user interfaces. Recommended: CS 160. Audit available.

CS 160. Exploring Computer Science. 4 Credits.
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 careers options and develops rudimentary software development skills. Recommended: Computer Literacy (such as completion of CIS 120); MTH 65 and RD 115. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

CS 161. Computer Science I. 4 Credits.
Introduces the concepts of computer science. Explores problem solving, algorithm and program design, data types, loops, control structures, subprograms, and arrays. Introduces writing programs in a high level programming language. Surveys current social and ethical aspects of computer science. Recommended: MTH 111, WR 121, and CS 160. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

CS 162. Computer Science II. 4 Credits.
Explores classes, pointers, dynamic memory, linear linked lists, multi-dimensional arrays, program correctness, verification, and testing. Prerequisite: CS 161. Recommended: MTH 112 and WR 121. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

CS 201. Computer Systems. 4 Credits.
Introduces computer systems from a software perspective. Provides an overview of C and assembly language programming and reading skills. Explores basic systems programming skills and tools to measure and improve program performance based on an understanding of key aspects of machine architecture. Prerequisite: CS 162. Recommended: CS 140U. Audit available.

CS 233G. Game Programming. 4 Credits.
Introduces object-oriented architectures and software design patterns used for game design. Explores a game engine software framework to design and implement several kinds of games, animation techniques, physics simulation, user controls, graphical methods, and intelligent behaviors. Recommended: one term of a programming language such as C, C++, Java or C#. Audit available.

CS 233U. Advanced C Programming. 4 Credits.
Advanced C programming including the preprocessor, advanced pointers, data structures, algorithms, and program structure. Lab exercises. Recommended: CS 133U, MTH 112, WR 121, CS 140U. Additional lab hours may be required. Audit available.

CS 250. Discrete Structures I. 4 Credits.
Introduces discrete structures and computational techniques in the areas of first-order logic, discrete proofs, number theory, sequence induction, recursion, and set theory. Prerequisite: MTH 111, CS 161. Audit available.

CS 251. Discrete Structures II. 4 Credits.
Introduces discrete structures and computational techniques in the areas of functions, relations, probability, graph theory, algorithm analysis, and finite state automata. Prerequisite: CS 250. Audit available.
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CS 260. Data Structures. 4 Credits.
Explores stacks, queues, lists, vectors, hash tables, graphs, trees and algorithms including sorting, searching, iterating over data structures and recursion. Prerequisite: CS 162. Audit available.

CS 261. Programming Systems. 4 Credits.
Explores the theory and practice of object-oriented programming as embodied in both Java and C++. Introduces inheritance, polymorphism, virtual functions, templates, exceptions, operator overloading and the extensive libraries that are available as a standard part of Java and C++. Prerequisite: CS 260. Audit available.

CONSUMER AND FAMILY STUDIES

HEC 157. Parenting Skills. 1 Credit.
Designed for parents or prospective parents to examine the current issues affecting the role of parents in today’s society. Studies the stages of child development, influences parents have on their child’s development and how those influences can shape their child’s development over time. Audit available.

HEC 201. Family Partnerships in Education. 3 Credits.
The study of influences on children and their families which impact child and family behaviors, values, attitudes, beliefs, and morals. Topics include: parenting patterns: cultural, religious and socioeconomic influences; peer, school, media, impacts; family development, community ecology, special needs children, prejudice, and public policy. Audit available.

HEC 226. Child Development. 4 Credits.
Basic theories, research and principles of physical, cognitive, language, social and emotional development of children from the prenatal period through adolescence. Includes observation and classroom processes. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.
This course fulfills the following GE requirements: Social Sciences/AS, Social Sciences/AAS, Social Sciences/ASS.

HEC 280A. Cooperative Education: Consumer and Family Studies. 1-10 Credit.
Offers hands-on skill in planned, supervised and regularly evaluated experiences at appropriate work sites. Each cooperative education placement site is planned to meet the student’s individual and specific skill needs. Department permission required. Audit available.

HEC 9421. Living and Learning with Your Toddler. 1 Credit.
Designed for parents and their children between the walking stage and two and one-half years of age. Parents observe and participate with their children in developmentally designed activities. In addition, they participate in a parent seminar focusing on parenting topics and needs. Audit available.

CRIMINAL JUSTICE

CJA 100. Professions in Criminal Justice. 3 Credits.
Provides overview of the various careers in the public safety professions, including police, corrections, parole and probation, juvenile and adult casework, private security, loss prevention, and private investigator. Prerequisites: Placement into WR 121. Audit available.

CJA 101. Cultural Diversity in Criminal Justice Professions. 3 Credits.
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: WR 121. Audit available.

CJA 111. Introduction to Criminal Justice System - Police. 3 Credits.
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. Audit available.

CJA 112. Introduction to Criminal Justice System - Courts. 3 Credits.
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 attorneys, judges, jury, police and more. Also examined various criminal court procedures from arrest and arraignment through trial and sentencing. Prerequisite: Placement into WR 121. Audit available.

CJA 113. Introduction to the Criminal Justice System - Corrections. 3 Credits.
Covers theories and current practices in correctional treatment, crime prevention, contemporary criminal justice services and treatment methods, and professional career opportunities. Prerequisites: Placement into WR 121. Audit available.

CJA 114. Introduction to Juvenile Process. 3 Credits.
Introduces history and philosophies of juvenile adjudication and corrections. Covers current programs in Oregon available to juveniles who are or have been involved in the justice system. Provides a focus on integrating theories of causation, juvenile law, and procedural requirements. Prerequisites: Placement into WR 121 or (instructor permission). Audit available.

CJA 115. Introduction to Jail Operations. 3 Credits.
Introduces jail operations including security, intake, classification and other daily procedures concerning inmates. Problems and issues facing contemporary jails will be explored and possible solutions studied. Prerequisites: Placement into WR 121. Audit available.

CJA 116. Juvenile Risk Assessment. 3 Credits.
Covers fundamentals of assessing juveniles at risk of becoming involved in serious delinquent behavior. Focuses on specific types of problems such as violence, chemical dependency and sexual offending. Youth treatment programs will also be examined. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/concurrent: CJA 114. Audit available.

CJA 117. Introduction to Homeland Security. 3 Credits.
Introduces Homeland Security and its function of coordinating efforts to develop and implement a comprehensive national strategy to secure the nation from terrorist threats or attacks. Agencies associated with Homeland Security along with their duties and relationships are covered. Explores historical events, laws, issues, communications, critical threats and other topics related to protecting the national infrastructure. Prerequisites: Placement into WR 121. Audit available.

CJA 210. Arrest, Search and Seizure. 3 Credits.
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 111 and CJA 112 and WR 121. Audit available.

CJA 211. Civil Liability and Ethics in Criminal Justice. 3 Credits.
Explores the conduct and ethics of criminal justice practitioners that give rise to civil liability. Particular attention is paid to aspects of risk management to help prevent legal claims. Prerequisites: CJA 100, CJA 111 and WR 121 or instructor permission. Audit available.

CJA 212. Criminal Law. 3 Credits.
Introduces substantive criminal law including basic principles of criminal liability, constitutional aspects, defenses and accomplice liability. Elements of development of specific crimes are covered and court decisions interpreting statutes are analyzed. Prerequisites: CJA 111, WR 121. Audit available.

CJA 213. Evidence. 3 Credits.
Explores the rules regarding the use of evidence according to state and federal laws. A wide variety of topics are introduced relating to evidence including collection, preservation, chain of custody, admissibility and exclusion at trial. Prerequisites: CJA 111, WR 121. Audit available.

CJA 214. Criminal Investigation. 3 Credits.
Introduces modern investigative methods, including the collection and preservation of physical evidence, scientific aids, sources of information, interviews, follow-up and case presentation. Includes techniques of interview and interrogation. Prerequisites: CJA 111; WR 121. Audit available.

CJA 215. Forensic Science and Criminalistics. 3 Credits.
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: Placement into WR 121. Audit available.

CJA 216. Interviewing and Interrogation. 3 Credits.
Provides knowledge and working skills in the art of interviewing and interrogation. Prerequisites: CJA 100, 111; WR 121. Audit available.
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CJA 218. Criminal Justice Perspectives of Violence & Aggression. 3 Credits.
Explores and analyzes violence and aggression as viewed from biological, psychological, psychiatric and sociological perspectives. Emphasizes episodically violent individuals, their detection, treatment methods and violence prevention in the area of crisis intervention. Presents the tools and techniques of crisis intervention through discussion, demonstrations, simulation and role playing. Prerequisites: CJA 100; WR 121. Audit available.

CJA 225. Criminal Justice and the United States Constitution. 3 Credits.
Provides a broad overview of United States Constitutional Law as it relates to professions in the criminal justice field. Focuses on those Articles and Amendments related to criminal justice that limit government authority. Prerequisites: CJA 100, CJA 111, CJA 112, and WR 121. Audit Available.

CJA 228. Organized Crime and Terrorism. 3 Credits.
Provides information on organized crime, its development, growth and impact on society and criminal justice processes. Includes crime families, terrorists, gangs and fringe groups with criminal intentions, their detection, investigation and combat. Prerequisites: CJA 100; WR 121. Audit available.

CJA 230. Police Report Writing. 4 Credits.
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 210 and 212. Audit available.

CJA 231. Crime Scene Photography. 3 Credits.
Introduces crime scene photography skills to aid in crime scene and evidentiary documentation. Includes camera operation, exposure control, proficiency in relational photos, close-up photography, lighting, flash control and videography. Prerequisite: WR 121 and CJA 111. Audit available.

CJA 232. Intelligence Led Policing. 3 Credits.
Moves information gathered on criminal activities from knowledge to action. Provides a foundation on intelligence management as it relates to collection, analysis and dissemination of information related to threats in an attempt to facilitate informed decision-making, policies and appropriate operational response while maintaining respect for the Constitution and privacy rights of citizens. Prerequisites: WR 121 and CJA 111. Audit available.

CJA 233. Aspects of Homicide. 3 Credits.
Provides a historical examination and analysis of homicide. Explores the differences between homicide and murder and analyzes the different degrees of murder. Examines theories on the motives for homicide, murder, mass murder and serial murders. Explores how the criminal justice system works with murder and other death-related crimes. Introduces methods for detection, investigation and prosecution of murder cases including the analysis of forensic evidence in homicide cases to determine cause of death. Prerequisite: CJA 212. Audit available.

CJA 234. Intelligence Analysis and Security Management. 3 Credits.
Provides a foundation on the collection, analysis and dissemination of information related to threats to the nation in an attempt to facilitate informed decision-making, policies and appropriate operational response while at the same time maintaining respect for the Constitution and privacy of the American people. Introduces security management of disasters and threats to the national infrastructure. Prerequisites: CJA 210 and CJA 111. Audit available.

CJA 235. Transportation and Border Security. 3 Credits.
Provides an in-depth view of modern border and transportation security. Includes security for seaports, ships, aircraft, trains, trucks, pipelines, buses, etc. Focuses on the technology needed to detect terrorists and their weapons. Covers related legal, economic, political and cultural issues. Prerequisites: WR 121 and CJA 111. Audit available.

CJA 243. Narcotics and Dangerous Drugs. 3 Credits.
Covers history and causes of narcotic and drug problems, how to identify drug addicts and drug abusers, how to define and classify various types of narcotics and dangerous drugs, including laws and other controls and rehabilitation programs. Prerequisites: CJA 100; WR 121. Audit available.

CJA 244. Tactical Communication in Crisis Incidents. 3 Credits.
This course focuses on police intervention in the lives of people in the midst of an emotional or physical crisis in the manner designed to minimize or prevent violence while gaining control of the situation. Emphasized are verbal and non-verbal communication techniques and skills utilized to calm the client and gain compliance helping to lead to a successful and safe resolution. Prerequisites: Placement into WR 121 (or instructor permission). Audit available.

CJA 245. Search Warrant Preparation. 3 Credits.
Covers legal concepts in search warrant preparation and focuses on learning to draft legal documents comprised of probable cause statements and judicial orders. Particular attention is paid to strengthening legal writing and evidence gathering in preparation for warrant application. Prerequisites: CJA 210 and WR 227. Audit available.

CJA 246. Fish and Wildlife Enforcement. 3 Credits.
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. Audit available.

CJA 247. Introduction to Criminal Gangs. 3 Credits.
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. Audit available.

CJA 251. Management Strategies for Police Leaders. 4 Credits.
Introduces knowledge, skills and techniques needed for effective management of police personnel. Includes establishing performance objectives, appraisals, discipline discharge and effective communication techniques when handling grievances and other employee issues. Covers labor laws as well as constitutional concepts related to property, liberty and due process. Prerequisite: CJA 290 and CJA 211. Audit available.

CJA 252. Integrative Police Leadership. 4 Credits.
Introduces concepts of police leadership and supervision and its impact on high reliability organization. Examines differing managerial styles and collaborative practices as a means of discovering one's own leanings and strengths. Focuses on ideas and suggestions to help improve leadership skills through incremental and positive changes over time. Prerequisite: CJA 251. Audit available.

CJA 253. Critical Thinking for Police Leaders. 4 Credits.
Focuses on the role of critical thinking in police leadership and decision making. Covers a systems approach of the critical thinking process to be applied in a police setting from routine daily operations to critical incident management. Includes topics such as informed decision-making, strategic processes, incorporating agency policies and appropriate operational response. Prerequisite: CJA 252. Audit available.

CJA 254. Leading Police Resilience. 4 Credits.
Introduces a multi-disciplinary approach to managing the police-citizen encounter through enhancing personal, organizational and community resilience. Covers issues related to contemporary law enforcement culture, leadership and management, warrior ethos, ethics, personality, emotional and social intelligence, emotional regulation, stress management, and physical and mental fitness. Prerequisite: CJA 251. Audit available.

CJA 260. Introduction to Correctional Institutions. 3 Credits.
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. Audit available.

CJA 261. Introduction to Probation and Parole. 3 Credits.
Introduces Community Corrections or probation and parole in the management of offender behavior. Discusses Management of Community Corrections agencies and community intervention with offenders. Prerequisite: CJA 100, 113. Audit available.

CJA 262. Introduction to Correctional Treatment. 3 Credits.
This course provides an overview of correctional treatment within the criminal justice system. It provides insight into the role and purpose of effective correctional treatment strategies and programs, including the responsibilities of providers and clients. Prerequisites: CJA 100 and CJA 113. Audit available.

CJA 263. Introduction to Corrections Casework. 3 Credits.
Introduces the process of casework and case management in a correctional setting. Develops both a theoretical and practical base of knowledge to allow the student to develop counseling techniques. Prerequisite: CJA 100, 113. Audit available.

CJA 264. Introduction to Corrections Administration. 3 Credits.
This course provides an overview of the administration and management of corrections facilities, programs and field services. It provides insight into the role and purpose of effective management strategies for the professional delivery of correctional services. Prerequisites: CJA 100 and CJA 113. Audit available.
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CJA 265. Community Reentry for Offenders. 3 Credits.
Provides an overview of the role and responsibilities of the community jail and prison in preparing offenders for reentry into a lawful place within the community. Covers the steps necessary to prepare the offender for release, offender skills assessment processes, brokering employment opportunities and resources as well as other methods to support offenders while returning to positive lawful roles in the community. Prerequisites: CJA 113 and WR 121. Audit available.

CJA 279. Criminal Justice Seminar. 1-4 Credit.
Designed for criminal justice agencies offering special topic seminars to meet the information and training needs of local criminal justice agencies. Audit available.

CJA 280A. Cooperative Education: Criminal Justice. 1-3 Credit.
Students participate with various public safety 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).

Crop Soil Science

CSS 200. Soils and Plant Nutrition. 4 Credits.
Examines soils and plant interrelationships. Introduces soil development and terms, physical, biological, and chemical properties, and the use of organic and inorganic means to provide optimum environment for plant growth. Recommended: MTH 60 or instructor permission. Audit available.

Culinary Assistant

HR 107. Culinary Assistant Training. 15 Credits.
Complete individualized vocational training in food services or clerical areas. Classroom sessions cover customer service skills, and developing effective communication and appropriate social skills at work. Audit available.

HR 108. Culinary Assistant Training. 15 Credits.
Complete individualized vocational training in food services or clerical areas. Classroom sessions cover career exploration. Topics include: identification of values, interests, skills, and barriers to employment. Audit available.

HR 109. Culinary Assistant Training. 15 Credits.
Complete individualized vocational training in food services or clerical areas. Classroom sessions cover career exploration. Topics include: identification of values, interests, skills, and barriers to employment. Audit available.

Dance

D 120. Pilates for Dancers. 1 Credit.
Builds on concepts and skills in the Pilates Method of conditioning. Designed to continue to increase core strength and stabilization, by challenging one’s body to further its range of motion. Provides knowledge and skills in non-impact whole body exercise that includes standing variations to further challenge the student as it pertains to dance. Benefits include core strength and stabilization, muscle tone, flexibility, improved posture and body/mind awareness. PE 186P and D 120 are equivalent and only one may be taken for credit. Recommend: Pilates II or instructor permission. Audit available.

D 121. Conditioning for Dance. 1 Credit.
Examines somatic practices and conditioning methods as they pertain to dance training. Develops kinesthetic awareness, strength, flexibility, stability and greater efficiency in movement. Focus may vary from term to term. PE 186D and D 121 are equivalent and only one may be taken for credit. Audit available.

D 130A. Modern Dance I. 1 Credit.
Introduces fundamentals of Modern Dance technique with a focus on correct alignment, development of strength, flexibility, range of motion, and stability, and dance specific terminology. D 130A and PE 121A cannot both be taken for credit. Audit available.

D 130B. Modern Dance I. 1 Credit.
Explores concepts of beginning Modern Dance with a focus on correct alignment, form, musicality and moving with greater awareness. D 130B and PE 121B cannot both be taken for credit. Prerequisites: D 130A or PE 121A. Audit available.

D 131A. Modern Dance II. 1 Credit.
Develops Modern Dance technique at an Intermediate level with a focus on dynamic alignment, musicality, movement qualities, and functional technique. D 131A and PE 121C cannot both be taken for credit. Prerequisites: D 130B or PE 121B. Audit available.

D 131B. Modern Dance II. 1 Credit.
Continues development of Modern Dance technique at an Intermediate level with a focus on dynamic alignment, musicality, movement qualities, ensemble work, and functional technique. D 131B and PE 121D cannot both be taken for credit. Prerequisites: D 131A or PE 121C. Audit available.

D 150. Jazz Dance I. 1 Credit.
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. D 150 and PE 186F are equivalent and only one may be taken for credit. Audit available.

D 151. Jazz Dance II. 1 Credit.
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. D 151 and PE 186G are equivalent and only one may be taken for credit. Recommended: D 150 or PE 186F or equivalent. Audit available.

D 152. Introduction to Dance. 2 Credits.
Introduces fundamentals of dance technique including training in movement styles from a variety of disciplines. Focuses on correct alignment, development of strength, flexibility, range of motion, and stability, dance specific terminology, and musicality. Provides students with a foundation for Ballet, Modern, and Jazz. Audit available.

D 160. World Dance. 2 Credits.
Introduces traditional and popular dance forms and styles from a selection of countries and cultures. Examines and practices dance movement within a cultural context. Ethnic dances may vary by term. Audit available.

D 175A. Tap Dance I. 1 Credit.
Introduces fundamentals of tap dance technique and vocabulary. Develops a sense of timing, rhythm, and musicality. Emphasizes basic traditional tap steps, rhythm tap combinations and complete dances. D 175A and PE 186K are equivalent and only one may be taken for credit. Audit available.

D 175B. Tap Dance II. 1 Credit.
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. D 175B and PE 186M are equivalent and only one may be taken for credit. Recommended: D 175A or PE 186K or equivalent. Audit available.

D 177. Hip Hop. 1 Credit.
Introduces the fundamental principles and skills of Hip Hop dance. Places emphasis on development of correct technique, strength and flexibility, musicality, and individual expression through movement. Focuses on Hip Hop elements, culture, and terminology. D 177 and PE 186R are equivalent and only one may be taken for credit. Audit available.

D 177B. Hip Hop II. 1 Credit.
Continue the development of Hip Hop dance at an intermediate level with a focus on longer, more challenging phrases and performance aspects. Emphasis will be placed on the development of correct technique, strength and flexibility, musicality, and individual expression through movement. D 177B and PE 186S are equivalent and only one may be taken for credit. Prerequisite: D 177 or PE 186R or instructor approval. Audit available.

D 184. Ballroom Dance. 1 Credit.
Introduces the fundamental principles of Ballroom Dance. Places emphasis on proper partnering, style, and phrasing. Focuses on elements of Foxtrot, Waltz, Swing, Cha-Cha, and Rumba. D 184 and PE 186D are equivalent and only one may be taken for credit. Audit available.

D 184B. Ballroom II. 1 Credit.
Continues the development of skills in ballroom dance at an intermediate level as well as enriching the depth of the dance technique and complexity of choreography. Focus is placed on: appropriate partnering in order to lead or follow, rhythm, style, and phrasing. Dances may include: Waltz, Foxtrot, Tango, Quickstep, Rumba, Cha-Cha, Swing, Samba, Jive, and Night Club Two Step. D 184B and PE 186E are equivalent and only one may be taken for credit. Prerequisites: D 184 or PE 186D or instructor approval. Audit available.

D 190A. Ballet I. 1 Credit.
Introduces fundamentals of Ballet technique with a focus on correct alignment, development of strength, flexibility, range of motion, stability, and Ballet terminology. D 190A and PE 120A cannot both be taken for credit. Audit available.
D 190B. Ballet I. 1 Credit.
Explores concepts of beginning Ballet with a focus on correct alignment, form, musicality and moving with greater awareness. Provides a foundation for Ballet II. D 190B and PE 120B cannot both be taken for credit. Prerequisites: D 190A or PE 120A. Audit available.

D 191A. Ballet II. 1 Credit.
Develops Ballet technique at intermediate level with a focus on dynamic alignment, musicality, movement qualities, and functional technique. D 191A and PE 120C cannot both be taken for credit. Prerequisites: D 190B or PE 120B. Audit available.

D 191B. Ballet II. 1 Credit.
Continues development of Ballet technique at an intermediate level with a focus on dynamic alignment, musicality, movement qualities, and functional technique. D 191B and PE 120D cannot both be taken for credit. Prerequisites: D 191A or PE 120C. Audit available.

D 209. Dance Performance. 1 Credit.
Offers practical experience in dance rehearsal and performance with a varying focus each term. Prerequisites: D 131B, D 191B, D 151, D 230A, D 230B, D 290A, D 290B, or D 252 or instructor permission. Audit available.

D 210. Dance Performance. 2 Credits.
Offers practical experience in dance rehearsal and performance with a varying focus each term. Provides experience in production elements of dance performance as well as the opportunity to expand understanding of the choreographic process through research. Requires audition for admission. Prerequisites: WR 115 and D 131B or D 151 or D 191B or D 230A or D 230B or D 290A or D 290B or D 252 or instructor permission. Audit available.

D 211. Dance Performance. 3 Credits.
Offers practical experience in dance rehearsal and performance with a varying focus each term. Provides experience in production elements of dance performance as well as the opportunity to expand understanding of the choreographic process through research, presentation, and community interaction. Prerequisites: WR 115 and D 131B or D 191B or D 151 or D 230A or D 230B or D 290A or D 290B or D 252 or instructor permission. Audit available.

D 230A. Modern Dance III. 1 Credit.
Develops Modern Dance technique at an Intermediate/Advanced level with a focus on dynamic alignment, musicality, movement qualities, functional technique, and performance. D 230A and PE 121E cannot both be taken for credit. Prerequisites: D 131B or PE 121D. Audit available.

D 230B. Modern Dance III. 1 Credit.
Continues development of Modern Dance technique at an Intermediate/Advanced level with a focus on applying techniques and skills to enhance performance. D 230B and PE 121F cannot both be taken for credit. Prerequisites: D 230A or PE 121E. Audit available.

D 251. Dance Appreciation. 4 Credits.
Develops an awareness and appreciation of dance in its artistic, social, historical, and cultural contexts. Considers aspects of dance as cultural, spiritual, and aesthetic expression, exploring origins and the related roles of the dancer, choreographer, and spectator. Offers a variety of experiences, including the viewing of dance in live and recorded formats, reading about dance, discussing dance, and hearing from guest experts. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

D 252. Jazz Dance III. 1 Credit.
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. D 252 and PE 186G are equivalent and only one may be taken for credit. Recommended: D 151 or PE 186G or equivalent. Audit available.

D 260. Dance Improvisation. 1 Credit.
Introduces beginning skills in dance improvisation through the exploration of structured and open improvisations, scores, games, and group observation and discussion. Audit available.

D 261. Dance Improvisation. 1 Credit.
Continues to develop skills in dance improvisation through the exploration of structured and open improvisations, scores, games, and group observation and discussion. Prerequisite: D 260. Audit available.

D 270. Introduction to Choreography. 2 Credits.
Introduces students to the principles and practice of dance choreography. Emphasis will be placed on: generating movement through improvisation and source exploration; manipulation of movement; choreographic forms; the creation and performance of short movement studies; and dance observation and critique. Audit available.

D 275. Dance and Hip Hop Culture. 4 Credits.
Examines the historical, artistic, social, and cultural relevance of Hip Hop both in the U.S. and abroad. Uses the four elements of Hip Hop as a foundation to explore a variety of topics related to dance in Hip Hop culture. Prerequisites: WR 115 and RD 115. Audit available.

D 290A. Ballet III. 1 Credit.
Develops Ballet technique at an advanced level with a focus on dynamic alignment, musicality, movement qualities, functional technique and performance. D 290A and PE 120E cannot both be taken for credit. Prerequisites: D 191B or PE 120D. Audited available.

D 290B. Ballet III. 1 Credit.
Continues development of Ballet technique at an advanced level with a focus on increasingly complicated choreography and the expression and communication of Ballet in performance. D 290B and PE 120E cannot both be taken for credit. Prerequisites: D 290A or PE 120E. Audit available.

DEALER SERVICE TECHNOLOGY

DST 110. Caterpillar Engine Fundamentals. 8 Credits.
This course introduces the student to Caterpillar basic diesel engine theory and service procedures. The principles of compression ignited internal combustion engines are taught and variations in design are discussed. Caterpillar engines are used for lab disassembly and assembly. Prerequisites: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. Audit available.

DST 111. Introduction to Caterpillar Service Industry. 3 Credits.
This course introduces the student to the Caterpillar Organization and provides instruction and lab experience in shop safety, shop operation, service tools, and how to obtain Caterpillar Service Information. (SIS) Prerequisites: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. Audit available.

DST 112. Caterpillar Hydraulic Fundamentals. 4 Credits.
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 various 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 110 and DST 111. Audit available.

DST 113. Caterpillar Engine Fuel Systems. 4 Credits.
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. Audit available.

DST 114. Fundamentals of Electrical Systems. 4 Credits.
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. Audit available.

DST 115. Air Conditioning. 3 Credits.
This course is designed to prepare the servicemen to understand the principles of air conditioning, to identify air conditioning components, to state the components, 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 111. Audit available.

DST 116. Fundamentals of Transmissions and Torque Converters. 4 Credits.
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. Prerequisites 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 111. Audit available.

DST 117. Caterpillar Machine Hydraulic Systems. 4 Credits.
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. Audit available.
DST 150. Caterpillar Service Technology Internship. 6 Credits.
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. Audit available.

DST 200. Undercarriage and Final Drive. 4 Credits.
This course will discuss methods for transferring power through the mechanical power train and cover differential, brakes, final drives, and under carriage. The content of this course should be treated as general information for power train components in all Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 116. Audit available.

DST 201. Machine Electronic Systems. 4 Credits.
This course introduces the student to Caterpillar machine electronic systems and diagnostic tooling needed by a technician to properly diagnose and repair the complex electrical/electronic systems installed in Caterpillar machines. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 117. Audit available.

DST 202. Caterpillar Engine Performance. 3 Credits.
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, and 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. Audit available.

DST 203. Caterpillar Machine Diagnostic. 3 Credits.
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. Audit available.

DST 204. Machine Specific Systems. 6 Credits.
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. Audit available.

DENTAL ASSISTING

DA 110. Clinical Procedures I. 3 Credits.
Introduction to clinical dental assisting including operatory preparation, sterilization/disinfection procedures, dental equipment, tray set-ups and restorative dental procedures.

DA 111. Clinical Procedures I (Lab). 2 Credits.
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 Credit.
Intermediate clinical dental assisting with instruction in oral examination, charting and other procedures. PREREQ: DA 110.

DA 113. Clinical Procedures II (Lab). 3 Credits.
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 Credit.
Advanced clinical dental assisting with instruction in dental specialty procedures.

DA 115. Clinical Procedures Lab III. 5 Credits.
Advanced clinical experience, including dental specialty procedures. Students spend three days per week in dental office internships.

DA 116. Introduction to Dental Assisting. 2 Credits.
Covers medical emergencies, pharmacology and 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. Prerequisites: acceptance into the dental assisting program.

DA 118. Expanded Duties I. 1 Credit.
Study of the function and procedures beyond the scope of general dental assisting as allowed by the Oregon Dental Practice Act. Includes amalgam polishing and margination, rubber dam placement and removal.

DA 119. Expanded Duties II. 1 Credit.
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 Credits.
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 Credits.
Practices radiographic techniques on manikins and correlate activities to the DA 120 lecture.

DA 122. Dental Radiology II. 1 Credit.
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 Credits.
Continued experience with radiographic techniques on manikins and clinic patients under direct supervision.

DA 125. Dental Radiology III (Lab). 2 Credits.
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 Credit.
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 Credits.
Lab activities prepare students in the proper handling and manipulation of the materials studied in DA 130 lecture.

DA 132. Dental Materials II. 1 Credit.
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 Credits.
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 Credits.
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 140A. Integrated Basic Science I. 2 Credits.
Covers basic principles of oral anatomy plus study of tooth form and function. Introductory course in the Dental Assisting program. Prerequisite/concurrent: DA 140B.

DA 140B. Integrated Basic Science II. 1 Credit.
Covers fundamental principles of human anatomy and physiology as they relate to the care of patients in the dental setting. Introduces dental embryology, microbiology and pathology. Prerequisite: Acceptance to the Dental Assisting Program. Prerequisite/concurrent: DA 140A.

DA 142. Integrated Basic Science III. 2 Credits.
Covers specializes study of the structures of the head and neck with emphasis on the oral cavity including study of Oral Pathology. Prerequisites: Acceptance into the Dental Assisting Program. Successful completion of DA 140A and DA 140B or other accepted college level Anatomy and Physiology Course.

DA 150. Dental Office Procedures I. 2 Credits.
Overview of procedures associated with reception desk responsibilities and dental office management.

DA 152. Dental Office Procedures II. 2 Credits.
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 9060. Dental Assisting Practicum. 1-5 Credit.
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.

DENTAL HYGIENE

DH 100. Special Dental Hygiene Practice. 1-5 Credit.
Clinic experience for dental hygiene students or graduates needing to maintain or enhance clinic skills outside the regularly scheduled clinic sequence, especially in preparation for Board examinations. Instructor permission required.
DH 101. Dental Hygiene Theory I. 4 Credits.
Studies basic dental hygiene procedures, theory and philosophy as applied to direct patient services.

DH 102. Dental Hygiene Theory II. 2 Credits.
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 Credits.
Continues clinical activities to include treating beginning periodontal disease and patients with moderate/heavy deposits. Prerequisites: DH 103 and DH 106.

DH 104. Dental Hygiene Practice I. 3 Credits.
Continues clinical activities to include treating periodontal patients and providing patient care in a clinical environment. Patient care includes oral prophylaxis and oral hygiene. Co-requisite: DH 102.

DH 105. Dental Hygiene Practice II. 3 Credits.
Continues clinical activities to include treating periodontal patients and 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 Credits.
Continued clinical activities with increased difficulty in the type and number of cases.

DH 109. Dental Radiology I. 2 Credits.
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 Credit.

DH 110. Cariology. 2 Credits.
Studies the biological basis for the treatment of dental caries as an infectious process. Preventive measures and treatment modalities will be discussed.

DH 113. Dental Anatomy. 2 Credits.
Studies anatomical characteristics of all permanent and deciduous teeth and their adjoining structures.

DH 113L. Dental Anatomy (Lab). 1 Credit.

DH 121. Oral Health Education and Promotion. 1 Credit.
Familiarizes the student with selected teaching techniques having direct application to oral health education concepts.

DH 127. Medical Emergencies. 2 Credits.
Study of medical emergencies that occur in the dental office including prevention, recognition and appropriate intervention.

DH 128. Oral Histology. 2 Credits.
Introduces microscopic anatomy and embryology of the oral tissues.

DH 129. Oral Pathology. 3 Credits.
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 126; BI 122 or BI 232.

DH 130. Oral Histology Independent Study. 1 Credit.

DH 201. Dental Hygiene Theory IV. 2 Credits.
Dental hygiene theory applied to patients having periodontal disease; instruction includes comprehensive patient management. Co-requisites: DH 204 or DH 204B.

DH 202. Dental Hygiene Theory V. 3 Credits.
Advanced dental hygiene theory applied to patients having moderate to severe periodontal disease and provision of a variety of expanded dental hygiene functions. Co-requisite: DH 205.

DH 203. Dental Hygiene Theory VI. 2 Credits.
Continues dental hygiene theory. Includes the emerging role of the dental hygienist in collaboration with general health providers in alternative settings and independent practice settings. Includes job search skills and stress management.

DH 204. Dental Hygiene Practice IV. 5 Credits.
A continuation of clinical activities to include treating periodontal patients and patients with heavy deposits; activities will correlate to theory lecture course DH 201. Co-requisite: DH 201.

DH 204A. Dental Hygiene Practice IV. 1 Credit.
Continues clinical activities to include treating beginning periodontal disease and moderate deposit patients. Prerequisites: DH 103 and DH 106.

DH 204B. Dental Hygiene Practice IV. 4 Credits.
Continues clinical activities to include treating moderate periodontal patients and patients with moderate/heavy deposits; activities will correlate to theory lecture course DH 201. Prerequisite: DH 204A. Corequisite: DH 201.

DH 205. Dental Hygiene Practice V. 5 Credits.
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 Credits.
Advanced dental hygiene clinical activities to include all aspects of previous training at increased skill levels. Nitrous oxide sedation included, plus simulated private practice and mock board activities.

DH 208. Community Oral Health I. 2 Credits.
Introduction to national and local public health issues and initiatives for delivering care to varied populations.

DH 210. Dental Radiology Lab II. 1 Credit.
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 Credits.
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 Credits.
Covers techniques of pain control by the administration of local anesthetics. Prepares student for management of complex clinical patients during advanced dental hygiene procedures.

DH 230. Dental Materials. 2 Credits.
Classification, chemistry, physical properties, and uses of dental materials including manipulation techniques.

DH 232. Nitrous Oxide Sedation. 2 Credits.

DH 236. Ethics & Jurisprudence. 1 Credit.
Studies legal restrictions and ethical responsibilities associated with the practice of dental hygiene and dentistry.

DH 240. Intro to Dh Restorative Dentistry. 2 Credits.
Introduction to four-handed dentistry with an emphasis placed on rubber dam placement, instrument identification, instrument transfer and preparation for assisting a dental restorative operator. Prerequisite: DH 110 and DH 230. Audit available.

DH 241. DH Restorative Dentistry I. 4 Credits.
Introduction to restorative techniques with an emphasis on the preclinical placement of amalgam restoration. Prerequisite: DH 240. Prerequisite/concurrent: DH 242. Audit available.

DH 242. DH Restorative Dentistry II. 4 Credits.
Introduction to restorative techniques with an emphasis on the preclinical placement of composite restorations. Prerequisite: DH 240. Prerequisite/concurrent: DH 241. Audit available.

DH 243. DH Restorative Dentistry III. 1 Credit.
Clinical practice in restorative dentistry and associated procedures as allowed by the Oregon Board of Dentistry. Students will provide a variety of restorative experiences on patients at a beginning skill level under direct supervision of clinic faculty. Prerequisites: DH 241, DH 242. Audit available.

DH 244. DH Restorative Dentistry IV. 1 Credit.
Continues clinical practice in restorative dentistry and associated procedures as allowed by the Oregon Board of Dentistry. Student will provide a variety of restorative experiences on patients at a developing skill level under indirect supervision of clinic faculty. Prerequisites: DH 244. Audit available.

DH 245. DH Restorative Dentistry V. 1 Credit.
Completes the series in clinical practice for restorative dentistry and associated procedures as allowed by the Oregon Board of Dentistry. Student will provide a variety of restorative experiences on patients at a competent skill level under indirect supervision of clinic faculty. Prerequisites: DH 244. Audit available.

DH 246. Pharmacology. 3 Credits.
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 Credit.
Introduction to epidemiological studies and basic statistics in preparation to critically evaluate evidence-based research of oral health.
COURSE DESCRIPTIONS

DH 252. Community Oral Health II. 2 Credits.
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 Credits.
Development, implementation and evaluation of dental health projects in the community.

DH 260. Periodontology I. 2 Credits.
Introduction to the science and management of periodontal diseases. Emphasizes microbial, biochemical and etiological principles. The course will correlate to clinical activities.

DENTAL TECHNOLOGY

DT 101. Dental Technology Lab I. 6 Credits.
Initial skill development in the use and operation of dental laboratory equipment, the application of safety principles, and introduction to the fabrication process of complete removable dentures. Audit available.

DT 102. Dental Technology Lab II. 6 Credits.
Continues skill development in complete denture construction, articulation, relining, repair and rebasing. Prerequisites: DT 101. Prerequisite/concurrent: DT 142, DT 152. Audit available.

DT 103. Dental Technology Lab III. 6 Credits.
Covers fabrication of partial dentures, immediate and overdentures. Prerequisites: DT 102, DT 152. Audit available.

DT 120. Dental Anatomy. 2 Credits.
Studies basic forms, structures and functions of teeth and their surrounding tissues. Audit available.

DT 141. Denture Techniques I. 2 Credits.
History and philosophy of complete removable dentures with an introduction to the construction process. Artificial tooth selection and setting procedures emphasized. Audit available.

DT 142. Denture Techniques II. 2 Credits.
Continues the study of denture construction. Includes the use of articulators, finishing procedures, relining, rebasing and repair techniques. Prerequisites: DT 141, DT 101, DT 151. Prerequisite/concurrent: DT 102, DT 152. Audit available.

DT 151. Science of Dental Materials I. 2 Credits.
Overview of materials used in dentistry such as gypsum products, waxes and impression materials. Audit available.

DT 152. Science of Dental Materials II. 3 Credits.
Introduces chemistry and physics, especially as they relate to dental materials. Measurement techniques and unit conversions are stressed. Audit available.

DT 204. Dental Technology Lab IV. 6 Credits.
Skill development in the processes and procedures associated with dental crown and bridge construction. Dental inlays included. Audit available.

DT 205. Dental Technology Lab V. 6 Credits.
The uses of porcelain and acrylic in crown and bridge construction with emphasis on color and form reproduction. Audit available.

DT 206A. Dental Technology Lab VI (Fabrication Ortho Appliances). 3 Credits.
Covers fabrication of removable and fixed orthodontic appliances. Prerequisites: DT 204 and DT 205. Prerequisite/concurrent: DT 204. Audit available.

DT 206B. Dental Technology Lab VII (CAD/CAM and Implant Restorations). 3 Credits.
Covers design and fabrication of fixed dental prostheses with CAD/CAM technology and fabrication of dental implant supported restorations. Prerequisites: DT 204 and DT 205. Prerequisite/concurrent: DT 287. Audit available.

DT 253. Science of Dental Materials III. 2 Credits.
Continued study of dental materials as related to cast metal alloys and crown and bridge construction. Audit available.

DT 254. Science of Dental Materials IV. 2 Credits.
Advanced study of dental materials including ceramics (porcelain) and high fusing metal alloys. Audit available.

DT 270. Inlay Casting, Crown and Bridge. 3 Credits.
Introduces crown and bridge construction processes and techniques including preparation and waxing of dies, investing, casting, and finishing. Principles also applied to dental inlays. Audit available.

DT 271. Partialis, Immediate and Overdentures. 2 Credits.
Covers the study of philosophy, materials, design and fabrication processes of removable partial, immediate and overdentures. Prerequisites: DT 102, DT 142. Prerequisite/concurrent: DT 103. Audit available.

DT 272. Dental Ceramics. 3 Credits.
Studies of dental ceramics (porcelain) including the philosophy, structure, properties, uses, and laboratory procedures associated with this material. Audit available.

DT 275. Dental Laboratory Management. 2 Credits.
Introduces management skills and responsibilities as well as the problems associated with dental laboratory ownership. Audit available.

DT 276. Dental Laboratory Management Lab. 1 Credit.
Computer-based exercises in techniques required for small business management. Audit available.

DT 284. Dental Specialties. 2 Credits.
Introduces dental specialties and advanced techniques that involve participation and skill of the dental lab technician. Audit available.

DT 286. DT Registered Graduate Preparation. 1 Credit.
Covers workplace preparation including professional ethics, organizations, opportunities, certification requirements and preparation for Registered Graduate (RG) testing through the National Board for Certification in Dental Laboratory Technology (NBC). Prerequisites: DT 270 and DT 272. Prerequisite/concurrent: DT 287.

DT 9406. Dental Technology Practicum. 1-5 Credit.
Covers all steps and procedures in the construction of dental replacements which may include cast metal crowns and bridges, the use of dental ceramics, and/or partial and full dentures. Audit available.

DEVELOPMENTAL EDUCATION

DE 21. Introduction to Information Literacy. 1 Credit.
Introduces students to the skills used to formulate a research query, emphasizing intellectual curiosity, creative thinking, and persistence in information seeking activities. Students learn and practice research as a multi-step process: identifying an information need and selecting a topic; formulating a question; locating and selecting varied and appropriate print and electronic sources; using critical reading and thinking to evaluate information; and paraphrasing and citing sources. Use of library resources is required, including contacting Reference Librarians for research assistance. This course is offered as a co-requisite to RD 80. Audit available.

DE 31. Learning Skills I. 1 Credit.
Introduces study skills required in college. Principle topics include motivation, goal setting, time management, organization of college, and study suggestions and techniques. Course may be taken alone or as part of a three-credit series (DE 31, 32, 33). Audit available.

DE 50. Vocabulary Building. 1 Credit.
Topics include determining word meaning, parts of speech, pronunciation, spelling, and writing with new vocabulary. Recommend for students in developmental and preparatory reading and writing classes. Prerequisites: Reading COMPASS score 44-65 or successful completion of ESOL 250 with a "C" or better. Audit available.

DE 51. Building Academic Vocab in Content Areas: Science/Literature. 2 Credits.
Includes determining word meaning, parts of speech, pronunciation and spelling of core vocabulary needed to read and comprehend content-rich materials in the areas of science and literature. Prerequisite: Program permission required. Audit available.

DE 52. Building Academic Vocab in Content Areas: Social Science/Math. 2 Credits.
Includes determining word meaning, parts of speech, pronunciation and spelling of core vocabulary needed to read and comprehend content-rich materials in the areas of social sciences and mathematics. Prerequisite: Program permission required. Audit available.

DIESEL SERVICE TECHNOLOGY

DS 101. Diesel Engine Rebuild and Lab Procedures. 12 Credits.
Examines engine theory, engine components, and proper diesel engine rebuild procedures. Introduces basic engine electrical and fuel systems, shop tool use and maintenance. Includes lift truck inspection and operator training. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.
DS 102. Truck Power Train. 6 Credits.
Explores concepts in gear transmissions, differentials and clutches involved in the application of diesel-powered vehicles. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 103. Fuel Injection Systems. 6 Credits.
Covers fuel injection systems and how they relate to diesel engine performance and operation. Explores 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. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 104. Fundamentals of Electricity & Electronics. 6 Credits.
Covers basic electrical theory, electrical components, and proper electric diagnostic procedures. Introduces basic electrical systems, diagnostic tool use and maintenance. Includes Cummins Electronic Engine controls and basic multiplexing. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 105. Fundamentals of Hydraulics & Air Conditioning Systems. 6 Credits.
Covers fundamentals of hydraulics in theory and shop practice. Provides a solid background in applications of hydraulics in the trucking and heavy equipment industry. Covers heavy duty air conditioning operation, trouble shooting and system repair. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 106. PM/Detroit Diesel Electronic Control. 4 Credits.
Covers Preventive Maintenance Inspection (PMI) of vehicles. Department of Transportation (D.O.T.) out of service criteria, PM scheduling, lubricants and Winterizing. Covers Detroit Diesel Electronic Control (DDEC) operation and diagnostics. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 107. Live Equipment and Lab. 6 Credits.
Repar of customer-owned (live) equipment under a minimum of supervision. Department approval required. Audit available.

DS 201. Heavy Duty Power Train. 6 Credits.
Introduces advanced theory and applications of automatic and power shift transmissions used in the heavy equipment industry. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 202. Fuel Injection System Diagnostics & Cat Elect Eng Controls. 6 Credits.
Covers fuel injection pumps and their applications, fuel system diagnostics and Caterpillar electronic engine controls. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 204. Diesel Starting, Charging and Electrical Control Systems. 6 Credits.
Covers advanced automotive electrical theory, electrical components, and proper electric diagnostic and repair procedures. Includes advanced automotive electrical systems, diagnostic tool use and maintenance. Prerequisite: DS 104. Audit available.

DS 205. Mobile and Hydrostatic Hydraulics. 6 Credits.
Covers advanced hydraulics and hydrostatics used on heavy equipment, farm machinery, marine equipment, hydraulic cranes, backhoes and other equipment. Emphasizes troubleshooting. Prerequisite/concurrent: DS 105. Audit available.

DS 206. Medium/Heavy Duty Truck Brake, Suspension & Steering. 8 Credits.
Examines concepts in medium/heavy duty truck brake systems, suspension and steering. Covers air brake systems, hydraulic brake systems, truck foundation brakes, antilock brakes, automatic slack adjusters, wheels, tires and fifth wheels. Emphasizes safety and the use of service manuals and textbooks. Prerequisites: RD 80 or equivalent placement test score and MTH 20 or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam. Audit available.

DS 280A. Cooperative Education: Diesel Service Technology. 1-10 Credit.
On-the-job work experience related to the individual’s education and career goals. Receive one credit for 30 hours of work. Department permission required. Audit available.

DS 280B. Cooperative Education: Diesel Service Technology - Seminar. 1-2 Credit.
Share and receive feedback on experiences from other students and instructors. Discuss job survival skills. Department permission required. Audit available.

DS 9112. Small Marine Diesel Engine Preventive Maint & Tune-up. 2 Credits.
Analyze and diagnose each supporting system of the small diesel engine to properly tune the engine for maximum performance. Audit available.

DIETARY MANAGER

DM 105. Food Production & Safety. 2 Credits.
Covers basic methods and skills related to local food production and food service preparation in the food industry. Includes garden preparation, seeding, planting, and maintenance; identifying and analyzing the factors which cause foodborne illnesses; and food safety and sanitation through proper purchasing, preparation, handling and storage. Includes ServSafe exam.

DM 119. Nutrition Through the Life Cycle. 3 Credits.
Examines the multi-dimensional relationships between humans and food. Includes the digestion process and the organs involved and the availability of nutrients from foods. Explores how culture, religion and age can impact food consumption. Prerequisites: MTH 20 and WR 90 or equivalent placement test scores.

DM 129. Food Service and Personnel Management. 4 Credits.
Covers managing people in the food service setting. Includes performing, planning and implementing safe food production from purchasing to serving. Corequisite: DM 130. Prerequisites: MTH 20 and WR 90 or equivalent placement test scores.

DM 130. Dietary Manager Field Experience I. 3 Credits.
Provides an opportunity to practice dietary manager skills of food service delivery and personnel resource management in a hospital, a skilled nursing center or other equivalent setting. Corequisites: DM 129. Prerequisite: DM 105.

DM 139. Nutrition for Dietary Managers. 3 Credits.
Explores medical nutrition therapy in long-term and acute care settings. Includes the common diseases and the specific diets used in the treatment or control of the disease. Includes the theory and process of nutritional screening for assessment of diet adequacy and the tools to plan and prepare menus. Prerequisite: DM 119. Corequisite: DM 140.

DM 140. Dietary Manager Field Experience II. 2 Credits.
Provide skilled practice for the Dietary Manager with an emphasis on nutrition and medical nutrition therapy in a skilled nursing facility, hospital or other equivalent setting. Corequisite: DM 139.

EARLY CHILDHOOD EDUCATION FA

ECE 120. Introduction to Early Education and Family Studies. 3 Credits.
Introductory level child development class integrating the normal growth and developmental patterns of children from conception through age 10 with developmentally appropriate practices. Linkages between development and practice in a variety of settings are covered with particular emphasis on parent (family) - teacher (caregiver) partnerships. Audit available.

ECE 121. Observation and Guidance I. 3 Credits.
Focuses on age-appropriate guidance and observations techniques for individual children six week to six years. Topics include the ongoing dynamics of relationships, how values and belief systems impact guidance decisions, and the linkages between observation and guidance plans for individual children. Audit available.

ECE 122. Environments and Curriculum in Early Care and Ed I. 4 Credits.
An introduction to an overview of creating physical and social environments and curriculum for children six weeks to six years in home or center-based programs. Course covers theories and relationships between physical and social space, activities, experiences, and materials. Students are introduced to the use of developmentally and culturally appropriate practices in planning, selecting, and evaluating environments and curriculum for young children. Audit available.

ECE 123. Environments and Curriculum in Early Care and Ed II. 4 Credits.
This course explores the use of developmentally and culturally appropriate practices in creating physical and social environments and curriculum for children six weeks to six years in home or center-based programs. Theories of play and early care and education are employed to plan and implement environments and curriculum for children. Students plan, implement, and evaluate environments and curriculum for young children. Prerequisite: ECE 122. Audit available.
ECE 124. Multicultural Practices: Exploring Our Views. 3 Credits.
Reviews skills necessary for supporting the total development of children, ages 6 weeks to 6 years, focusing on the role of the teacher in implementing a developmental program of early childhood education in two interdependent components: seminar and practicum. Prerequisites: ECE 120, ECE 121. Corequisite: ECE 131A or ECE 133.

ECE 130A. Practicum Seminar 1. 2 Credits.
Reviews skills necessary for supporting the total development of children, ages 6 weeks to 6 years, focusing on the role of the teacher in implementing a developmental program of early childhood education in two interdependent components: seminar and practicum. Prerequisites: ECE 120, ECE 121. Corequisite: ECE 131A or ECE 133.

ECE 130B. Practicum Seminar 2. 2 Credits.
Reviews skills necessary for supporting the total development of children, ages 6 weeks to 6 years, focusing on the role of the teacher in implementing a developmental program of early childhood education in two interdependent components: seminar and practicum. Prerequisites: ECE 130A. Corequisite: ECE 131B or ECE 134.

ECE 130C. Practicum Seminar 3. 2 Credits.
Reviews skills necessary for supporting the total development of children, ages 6 weeks to 6 years, focusing on the role of the teacher in implementing a developmental program of early childhood education in two interdependent components: seminar and practicum. Prerequisites: ECE 130A. Corequisite: ECE 131B or ECE 133.

ECE 131A. Practicum for Experienced Teachers 1. 3 Credits.
Improves and strengthens beginning level skills for working with children ages birth-5 in a group setting at work sites. Includes the use of developmentally appropriate methods in recognizing and providing safe, responsive, and sanitary environments. Department permission required based on work experience and previous coursework. Prerequisites: ECE 120, ECE 121. Corequisite: ECE 130A.

ECE 131B. Practicum for Experiences Teachers 2. 3 Credits.
Improves and strengthens basic intermediate level skills for working with children ages birth-5 in a group setting at work sites. Includes the use of developmentally appropriate methods to support guidance and conflict resolution; schedule and routine planning; fundamental curriculum development; and environmental modification. Department permission required based on work experience and previous coursework. Prerequisites: ECE 120, ECE 121. Corequisite: ECE 131B.

ECE 131C. Practicum for Experienced Teachers 3. 3 Credits.
Improves and strengthens advanced intermediate level skills for working with children ages birth-5 in a group setting at work sites. Includes the use of developmentally and culturally appropriate methods to support guidance and conflict resolution; development, implementation, and evaluation of environments and curriculum; and facilitation of classroom management. Department permission required based on work experience and previous coursework. Prerequisites: ECE 131B. Corequisite: ECE 130C.

ECE 132. Early Childhood Field Work. 2 Credits.
Students engage in intentional field work to gain practical experience, skill development, and professional direction in achieving their career goals, working under supervision in an approved worksite. Audit available.

ECE 133. Practicum 1. 3 Credits.
Covers developing beginning level skills for working with children ages birth - 5 in a group setting. Includes the use of developmentally appropriate methods in recognizing and providing safe, responsive, and sanitary environments; using beginning-level guidance strategies; and acclimating to the field of early education. Prerequisites: ECE 120, ECE 121, WR 90 (or equivalent placement score). Corequisites: ECE 130. Audit available.

ECE 134. Practicum 2. 3 Credits.
Covers development of basic intermediate level skills to work with children ages birth - 5 in a group setting. Includes the use of developmentally and culturally appropriate methods to support guidance and conflict resolution; development, implementation, and evaluation of environments and curriculum; and facilitation of classroom management. Prerequisites: ECE 134, ECE 123. Corequisites: ECE 130C. Recommended: HEC 201, ECE 124.

ECE 135. Practicum 3. 3 Credits.
Covers the development of advanced intermediate level skills to work with children ages birth - 5 in a group setting. Includes the use of developmentally and culturally appropriate methods to support guidance and conflict resolution; development, implementation, and evaluation of environments and curriculum; and facilitation of classroom management. Prerequisites: ECE 134, ECE 123. Corequisites: ECE 130C. Recommended: HEC 201, ECE 124.

ECE 170. Coaching and Mentoring in Early Education and Family Studies. 1 Credit.
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. Audit available.

ECE 173. Children and Loss: The Effects of Death and Divorce. 1 Credit.
Divorce and death in families can have a profound effect on young children. Development can be impacted across domains. This course examines the effects of loss on children and common developmental outcomes. Strategies and resources for supporting children and families through difficult periods involving separation or the death of a loved one are explored. Audit available.

ECE 174. Head Start Past and Present. 1 Credit.
Head Start (including Migrant and Tribal Head Start) has served and empowered families and children from low-income environments for over 30 years. Today, Head Start is one of the largest child care-related employers in the country. This course examines the history, current status, and future of Head Start. An ideal course for students interested in future employment with the agency. Audit available.

ECE 175A. Infant/Toddler Caregiving: Learning and Development. 1 Credit.
Covers growth and development: physical, cognitive, and language; ages of infancy and facilitating learning. Audit available.

ECE 175B. Infant/Toddler Caregiving: Group Care. 1 Credit.
Covers group care including: routines, quality, staff relations, environments and welcoming children and families into care. Audit available.

ECE 175C. Infant/Toddler Caregiving: Social/Emotional Growth. 1 Credit.
Covers social-emotional growth and socialization including: development, temperament, responsible care, guidance and discipline, and supporting the needs of infants and toddlers. Audit available.

ECE 175D. Infant/Toddler Caregiving: Family/Provider Relationships. 1 Credit.
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. Audit available.

ECE 177. Tiny to Tall: Making Mixed Age Groupings Work. 1 Credit.
Mixed-age early childhood settings can include children from infancy through elementary school age. This course explores the benefits and addresses the challenges of creating quality environments and programming for children of mixed ages. Audit available.

ECE 179. The Power of Portfolios in Early Education. 1 Credit.
Portfolios for children in early care and education programs are a powerful way to demonstrate children's skills, learning, development, and culture. Creating meaningful portfolios with children and families includes an observation plan, an organization system, and accessible technology (digital photography, scanners, etc.). Audit available.

ECE 180. Early Childhood Professional English A. 3 Credits.
ECP English A, the first term of a three-term sequence, introduces the academic English used in the fields of early childhood development and education. This course is intended for non-native speakers of English who are working toward an AAS degree in Early Education and Family Studies. Audit available.

ECE 181. Early Childhood Professional English B. 3 Credits.
ECP English B, the second term of a three-term sequence, continues an introduction to the academic English used in the fields of early childhood development and education. This course is intended for non-native speakers of English who are working toward an AAS degree in Early Education and Family Studies. Audit available.

ECE 182. Early Childhood Professional English C. 3 Credits.
ECP English C, the third term of a three-term sequence, continues an introduction to the academic English used in the fields of early childhood development and education. This course is intended for non-native speakers of English who are working toward an AAS degree in Early Education and Family Studies. Audit available.

ECE 184. Children's Puppetry & Theater. 1 Credit.
Puppetry and theater can be a powerful tool in early childhood environments. Puppetry and theater capitalizes on children's creativity and imagination. It fosters development across domains and is particularly effective in helping children work through issues, conflicts and important transitions in their lives. This course explores the many benefits of puppetry and theater for young children. Audit available.
COURSE DESCRIPTIONS

ECE 185. Planning Fun and Meaningful Field Trips for Young Children. 1 Credit.
Field trips are worth the hassle! Field trips build on child interests and contribute to children's developing knowledge of the world. This course explores the positive benefits of field trips in early childhood programs. Students will explore field trip possibilities in the Portland area, develop field trip protocols, and problem-solve common field trip issues. Audit available.

ECE 186. Nature and Gardening with Young Children. 1 Credit.
Children are inherently engaged by nature and gardening experiences. Bringing gardening and experiences in nature to your work with children will help you facilitate children's development across domains in an engaging and ever-changing context. This course explores the many benefits of gardening and natural experiences for young children. Audit available.

ECE 187. Cooking with Kids. 1 Credit.
Cooking with kids can do it all! Cooking can help young children learn language and literacy, math, science, cooperation, and healthy eating habits. Learn to create and share cooking experiences with young children in a way that maximizes child participation and developmental opportunities and minimizes the potential for chaos. Audit available.

ECE 188. Block Play and Woodworking for Young Children. 1 Credit.
When children are exposed to well-planned block play and wood working experiences, they create, they build, they construct, and they stay engaged. Bringing block play and wood working to your program will help you facilitate children's development across domains in an engaging context. This course explores the many benefits of block play and wood working experiences for young children. Audit available.

ECE 189. Building Relationships with Infants, Toddlers, and Families. 1 Credit.
Strong relationships are vital to healthy development for infants and toddlers. The role of infant and toddler caregivers is to facilitate, support, and sustain individualized relationships with the families and children in their programs. This course will explore ways in which caregivers can facilitate and sustain these extremely important relationships. Audit available.

ECE 191. Interest-Based Planning for Infants. 1 Credit.
Interest-based planning is a key aspect of quality curriculum development in early childhood. Identifying infant interests requires perceptive and responsive adult attention and creative effort. This course will explore the ways in which infants communicate their interests to adults, methods of assessing infant interests, and interest-based curriculum development in infant-care programs. Audit available.

ECE 193. Advocacy in the Field of Early Education and Family Studies. 1 Credit.
Issues in early education and family studies (affordability, funding, quality, compensation, accessibility, and so forth) provoke impassioned responses and a desire to effect change. This course explores the role of advocacy in the field of early education and family studies. In contributing to real-life (self-selected) advocacy efforts students will learn effective advocacy techniques, plan an advocacy project, and review lobbying and legislative processes. Audit available.

ECE 194. Surviving and Thriving: Managing Stress in Early Education. 1 Credit.
This course examines common sources of stress and burnout in early education and family studies. Strategies for surviving, thriving, and caring for the self are explored. Audit available.

ECE 197. Career Exploration in Early Education and Family Studies. 1 Credit.
Early Education and Family Studies is a broad field encompassing many forms of services for children and families. This course is designed for students who are considering a career in the field. In conjunction with service learning placements in the Portland area, students will explore the boundaries of the field, career options and requirements, and opportunities for life-long learning and advancement. Audit available.

ECE 198. Building Effective Outdoor Environments. 1 Credit.
Outdoor spaces are an integral part of quality early childhood environments. Outdoor experiences foster children's exploration and positive self-esteem as well as large and small motor development. This course will examine outdoor environments for children of all ages and abilities. Students will plan, implement, and evaluate outdoor environments and activities. Audit available.

ECE 200. The Professional in Early Education and Family Studies. 3 Credits.
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 responsibilities, and resources. Develops a professional philosophy. Prerequisite: WR 115 Audit available.

ECE 221. Observation and Guidance II. 3 Credits.
Examines techniques for observing and recording behavior and keeping records as used in the care and education of infants through five-year-olds. Focuses on observation and guidance techniques for groups of children in addressing challenging behaviors and issues in early childhood environments. Covers the caregiver's role in using observation to promote development, including self-development. Prerequisites: WR 115 and ECE 121. Audit available.

ECE 224. Multicultural Practice: Curriculum & Implementation. 3 Credits.
Develops awareness of cultural and ethnic issues as they relate to the early childhood classroom teacher. Focuses on ethnocentrism, racism and discrimination. Includes techniques for developing multi-cultural, anti-bias curriculum. Prerequisite: ECE 124. Audit available.

ECE 234. Children with Special Needs in Early Childhood Education. 3 Credits.
Become acquainted with areas of special needs in children from birth through six years of age. Emphasis is on inclusion of children in early childhood settings. Explore services available to children and their families. Child development helpful. Audit available.

ECE 235. Music and Movement in Early Childhood Education. 3 Credits.
Overview of the development of musical and motor skills in children from birth to age 6, learn and develop a variety of music and movement activities, techniques and materials appropriate for them. Audit available.

ECE 236. Language and Literacy in Early Childhood Education. 3 Credits.
Overview of language and literacy development in children from infancy to age 6. Design and use a variety of language and literacy development activities with young children. Audit available.

ECE 238. Administration of Early Childhood Programs. 3 Credits.
Studies various tasks and responsibilities of program administration. Topics include licensing, program planning, organization, financial management, parent and community relationships, and personnel management. Prior ECE course work and experience working with children in groups is highly recommended. Audit available.

ECE 241. Exploring the CDA. 1 Credit.
Introduces the national Child Development Associate (CDA) credential for professionals in early childhood care and education. Includes a description of the process of applying, developing competencies, and completing requirements for the CDA. Audit available.

ECE 260A. Advanced Practicum Seminar 1. 3 Credits.
Refines 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. Prerequisites: Certificate level courses plus WR 121, HEC 226, ECE 221. Corequisite: ECE 264. Audit available.

ECE 260B. Advanced Practicum Seminar 2. 3 Credits.
Refines 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. Prerequisites: ECE 260A. Corequisites: ECE 265.

ECE 264. Practicum 4. 4 Credits.
Introduces advanced skills necessary to work with children birth - 5 in a community field placement setting. Includes developmental theory, developmentally and culturally appropriate practices, and individualized methods to support guidance and conflict resolution. Covers the evaluation of environments and curriculum, building family and community relationships, and professionalism. Department permission. Prerequisite: ECE 135, HEC 226, ECE 221, WR 121, HE 112. Corequisites: ECE 260, ECE 200, ECE 234. Audit available.

ECE 265. Practicum 5. 4 Credits.
Covers advanced level skills to work with children birth - 5 in a community field placement setting. Includes developmental theory, developmentally and culturally appropriate practices, and individually responsive methods to support guidance and conflict resolution. Covers the development, implementation and evaluation of environments and curriculum, classroom management, family and community relationships, professional frameworks and resources, and professionalism. Department permission. Prerequisite: ECE 264. Corequisite: ECE 260B. Recommended: ECE 224, ECE 238.
ECONOMICS

EC 200. Introduction to Economics. 4 Credits.
Covers six topic areas: basic economic concepts, microeconomics, macroeconomics, the history of economic ideas, international trade and a variety of economic issues. Recommended for students who desire a one term course survey. Recommend: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EC 201. Principles of Economics: Microeconomics. 4 Credits.
Introduces the principles of microeconomics. Emphasis on the ability to recognize and analyze economic problems in the United States. Covers the American microeconomic system, which includes a familiarization with the basis of the price system and resource allocation; the operation of the firm; market concentration, regulation and antitrust problems. Recommended: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EC 202. Principles of Economics: Macroeconomics. 4 Credits.
Covers the overall economy. Includes the basic concepts for analyzing the problems of recession, inflation, and stagflation; the use of monetary, fiscal, and incomes policies; and other economic management tools. Recommended: MTH 95 and EC 201. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EC 203. Principles of Economics: Applications to Economic Issues. 4 Credits.
Covers economic topics related to current events. Includes international trade and finance; energy and resource economics; poverty, discrimination, and income distribution in national economies and the global economy; economic development; financial market instability; environmental and sustainability issues; government and central bank policies and competing ideologies; other current or relevant topics. Prerequisites: WR 115, RD 115, and MTH 95 or equivalent placement test scores, and EC 200 or EC 201 or EC 202. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EC 216. Labor Markets: Economics of Gender, Race, and Work. 4 Credits.
Covers topics related to labor markets with emphasis on the economic status of women and their decisions about work and family. Includes recent developments in the labor market; the gender pay gap and women-men occupational differences; labor supply decisions; human capital theory; racial discrimination; and economics of marriage and household decisions. Recommended: MTH 95. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EC 221. Globalization and International Relations. 4 Credits.
Provides an introductory survey of economic, political, social, and cultural dimensions of globalization and evaluates their impacts on international relations. Examines patterns of conflict and cooperation among countries including the influence of international institutions, NGOs, and global corporations. Introduces selected issues such as war and peace, global security, environment, elites and concentration of power, wealth and income distribution, cultural and ethnic identities and explores possible peaceful solutions to these global problems. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. PS 221, EC 221 and SOC 221 are equivalent and only one may be taken for credit. Audit available.

EC 230. Contemporary World Economic Issues: International Economics. 3 Credits.
Covers issues and problems related to international economics and international economic institutions. Includes trade and the balance of payments; trade competition between the U.S. and other nations; reform and restructuring of the Russian and Eastern European economies; economic development and problems of developing nations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ED 242. Modern China and Its Neighbors. 4 Credits.
Introduces Chinese politics and history emphasizing economic and other policies since 1949. Explores China's relationship to Tibet, Hong Kong, and Taiwan as well as political and economic systems in Japan, N. and S. Korea, Vietnam, and elsewhere. Examines diverse development strategies while assessing environmental and other impacts with local and global implications. EC 242 and PS 242 are equivalent and only one may be taken for credit. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ED 285. Introduction to Political Economy. 4 Credits.
Covers specific topics related to the United States economy from a systems/ institutional perspective. Includes key institutions that make up the U.S. economy such as, corporations, government, the market system, labor unions, monetary and financial institutions, and others. Examines three problem areas: environmental degradation and resource depletion; social and political inequality; and economic instability. Introduces possible solutions based on institutional change and develops viable economic alternatives based on principles of sustainability, equity and economic stability. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EDUCATION

ED 100. Introduction to Education for Paraeducators. 3 Credits.
Explores the roles of a variety of personnel in schools. Includes personal references to school situations, students, other personnel and the roles of students 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 from college-level study. Audit available.

ED 102. Displays & Graphics for Educators. 3 Credits.
Presented as a means of visual communication that develops an understanding and usage of the Internet, digital camera, scanner, and word processing for graphics. Introduces dry mounting, laminating, enlarging, copying, poster making, award making and bulletin board creating. Provides opportunities to empower the prospective librarians/teachers with the ability to promote content in different modalities. Prerequisite: CAS 133 or ED 136. Audit available.

ED 103. Desktop Publishing for Educators. 3 Credits.
Introduces desk-top publishing. Produces materials to be used in an educational setting using flat-bed scanners, graphics sources, layout guidelines and design rules. Prerequisites: ED 136. Audit available.

ED 104. Multimedia for Educators. 3 Credits.
Develops and evaluates multimedia presentations for use in schools and libraries. Multimedia presentation guidelines will be used in planning and developing materials. Audit available.

ED 109. Library Procedures. 3 Credits.
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 Decimal System, electronic library catalog, and cataloging systems, procedures for processing, and maintaining collections, basic terminology and policies. Prerequisite: Placement test scores qualifying student to enroll in WR 121. Audit available.

ED 111. Library Collection Development. 3 Credits.
Introduces the selection and evaluation of library materials with a focus on library standards, collection development policies, censorship, intellectual freedom, and copyright. Explores assessment of print and electronic resources, user needs, and selection tools. Prerequisites: ED 113 and CAS 133. Audit available.

ED 112. Introduction to Children's Literature. 3 Credits.
Introduces children's literature, authors and illustrators. Covers current and classic works, book awards, artistic and literary elements, introduction to genres, basic book discussion techniques, and audio-visual and electronic formats. Prerequisite: WR 115. Audit available.

ED 113. Introduction to Library and Information Services. 3 Credits.
Introduces the philosophical foundations of libraries and information services. Provides an overview of the history of libraries, different types of libraries, the roles of library staff, and the evolving purpose, function, and services of libraries within a community. Explores library ethics, values, advocacy, and governance. Prerequisites: Placement into WR 121. Prerequisite/corequisite: LIB 101.

ED 114. Library Reference Services. 3 Credits.
Introduces reference services and information resources. Focuses on the evaluation of reference resources in various formats and exploration of searching tools and how they work. Emphasis on the librarian who designs efficient search strategies, conducting effective reference interviews, and providing quality reference service. Prerequisites: ED 113 and ED 118. Audit available.
ED 115. Storytelling. 2 Credits.
Provides introduction into how to do storytelling. Different storytelling techniques will be demonstrated and practiced in the course. Audit available.

ED 116. Literature for Adolescence and Young Adults. 3 Credits.
Covers contemporary literature being read by young people of high school age, literature-related audio-visuals, and various specialized reading lists and bibliographies. Includes controversial areas in young adult literature. Audit available.

ED 118. Customer Service & Communication in Libraries. 3 Credits.
Examines communication, customer service and teamwork models within libraries. Focuses on developing practical skills for working in libraries, such as conflict resolution and interpersonal skills. Prerequisites: Placement into WR 121. Prerequisites/Concurrent: LIB 101.

ED 119. Library Access Services. 3 Credits.
Introduces access services within a library, including circulation processes and procedures, interlibrary loan, document delivery, reserves, and copyright. Explores providing quality customer service, maintaining patron confidentiality, and working with diverse individuals. Prerequisites: ED 113 and ED 118.

ED 122. Library Technical Services. 3 Credits.
Introduces basic procedures of acquisition, processing, maintaining, and preserving print and electronic collections, including serials subscriptions. Provides an overview of basic terminology and policies of technical services and collection management. Discusses management of collection budgets. Prerequisites: ED 113 and ED 134.

ED 123. Instructional Strategies: Reading. 3 Credits.
Introduces components of the reading process and techniques for teaching reading to kindergarten through grade 8 students. Includes assessment and methods for teaching students with special needs. Prerequisites: WR 115 and RD 115. Audit available.

ED 124. Instructional Strategies: Mathematics/Science. 3 Credits.
Provides introduction into how to do storytelling. Different storytelling techniques will be demonstrated and practiced in the course. Audit available.

ED 131. Applied Learning Theory. 3 Credits.
Prepares teachers and instructional assistants to work in a standards-based setting. Offers strategies to plan and implement instruction, assess student progress and instructional effectiveness, and re-teach as needed. Focuses on learning and motivational theories that apply to instructional situations. Includes creating and studying activities for specific learning problems. Prerequisites: WR 115 and RD 115. Audit available.

ED 134. Library Technology I. 3 Credits.
Introduces existing technologies used within a library, including library catalogs and integrated library systems. Explores computer hardware, software, applications, and other library equipment. Develops basic knowledge and troubleshooting skills. Examines assistive technologies. Prerequisites: CAS 133 and LIB 113.

ED 136. Learning with Technology. 3 Credits.
Explores existing and emerging educational technology being used in libraries and classrooms. Focuses on using educational technology to complement and enhance learning activities. Discusses basic principles of instructional design and adaptive technologies. Prerequisites: Placement into WR 121 and CAS 133.

ED 138. Library Cataloging and Classification. 3 Credits.
Introduces library classification systems, including Dewey Decimal System and Library of Congress Classification System. Explores basic principles and tools for cataloging both print and online materials. Discusses MARC records, bibliographic control, authority control, subject headings, and library consortia. Prerequisite: ED 122.

ED 161. Leadership Through Advocacy and Representation. 1 Credit.
Provides students serving on college or community decision-making bodies with the opportunity to develop leadership skills gained by representing and advocating for a constituency group. Students will process the skills learning by serving on committees that are associated with communication techniques, problem solving, interpersonal skills, research, and team work. Instructor permission required. Audit available.

ED 162. Leadership Through Civic Engagement. 2 Credits.
Provides students with the opportunity to hone their leadership skills by participating in activities associated with civic engagement through community service projects and volunteer roles. Students will develop leadership skills by working on meaningful projects that cultivate team work, communication techniques, group dynamics, project management, organization and evaluation. Instructor permission required. Audit available.

ED 163. Personal Leadership Development. 3 Credits.
Provides an overview of leadership theory, styles and skills. Student leaders will be provided with the opportunity to develop skills through skill-building exercises, professional networking techniques, group process and teamwork methods, basic communication techniques, prioritizing, goal setting and other basic information necessary for those anticipating leadership roles. Instructor permission required. Audit available.

ED 171. Computers in Education II. 3 Credits.
Provides introduction to all aspects of the Internet and email. Use internet browser. Recommended: Basic computer knowledge. Audit available.

ED 206. Seminar: Advanced Education Techniques. 3 Credits.
Provides time and direction for investigating current issues in education. Audit available.

ED 208. Outdoor School Leadership Practicum. 2 Credits.
Gain training and experience teaching and leading sixth graders at outdoor school. Requires attending at least one full day training session (10-12 hours) at the outdoor school site prior to the scheduled assignment to work for 1 week, approximately 16 hours per day, 4 days, at a residential outdoor school for 6th graders.

ED 209. Library Practicum I. 3 Credits.
Provides a minimum of 100 hours of supervised library field experience. Audit available.

ED 210. Library Practicum II. 3 Credits.
Provides a minimum of 100 hours of supervised library field experience. Audit available.

ED 211. Library Practicum III. 3 Credits.
Provides a minimum of 100 hours in a supervised field experience. Prerequisites: ED 113 and CAS 133. Audit available.

ED 214. Practicum: Outdoor School. 3 Credits.
Gain training and experience teaching and counseling sixth graders in an outdoor setting. Requires attending two evening training sessions; spending one week at an outdoor camp; keeping a journal and submitting a summation paper to the PCC coordinator. Audit available.

ED 216. Practicum: Seminar. 1 Credit.
Discuss practicum experiences, problems and successes. Concurrent enrollment in a practicum is required. Audit available.

ED 217. Classroom Management. 3 Credits.
Introduces several approaches to proactive classroom management. Strategies for setting up an appropriate room environment and establishing procedures, systems, and rules will be introduced and practiced. Behavior management will also be introduced and practiced. Prerequisites: WR 115 and RD 115. Audit available.

ED 218. Working with Paraeducators. 3 Credits.
Assists classroom teachers in developing effective methods to work effectively with paraeducators in their classrooms. Methods of assigning responsibilities, training, monitoring and supporting performance, and providing feedback will be explored along with communication and problem solving techniques. Prerequisites: RD 115, WR 115. Audit available.

ED 224. Foundations of Education. 3 Credits.
Provides an overview of the history and current issues in the field for K-12 education including the impact of philosophy on practice. Prerequisites: RD 115 and WR 115. Audit available.

ED 230. Preservation of Library Materials. 3 Credits.
Provides an introduction to all aspects of the Internet and email. Use internet browser. Recommended: Basic computer knowledge. Audit available.

ED 232. Library Outreach to Diverse Communities. 3 Credits.
Explores library services for diverse populations. Focuses on developing collections, services, and programs that promote inclusion. Discusses needs of the users from a multicultural perspective. Prerequisites: ED 113; ED 118.

ED 235. Library Technology II. 3 Credits.
Continues the study of technologies used within a library. Explores online tools, such as library databases, Internet search tools, social networking tools, library websites, and other media. Prerequisite: ED 134.

ED 238. Library Supervision and Management. 3 Credits.
Explores library supervision and management. Focuses on supervision and training of library staff, facilities, marketing, community outreach, budgeting, fundraising and grant writing. Prerequisites: ED 113; ED 118.
ED 251. Overview of Exceptional Learners. 3 Credits.
Introduction to diverse conditions of students with special needs in public schools. Identifies and defines the following disabilities: learning disabilities, emotional and behavior disorders, mental retardation, severe and multiple disabilities, autism, health impairments, physical disabilities, communication disorders, vision impairments, hearing loss, and traumatic brain injury. Audit available.

ED 252. Behavior Management. 3 Credits.
Behavior terminology will be defined and applied. Students will demonstrate and practice baselining, setting up a program, reinforcing, modeling, shaping, chaining, monitoring and graphing data. Audit available.

ED 258. Multicultural Education: Principles. 3 Credits.
Introduces philosophy, activities, and materials applied in developing a culturally sensitive multicultural classroom and curriculum. Achieves an understanding of multicultural education and its impact on teaching in the classroom. Prerequisites: RD 115 and WR 115. Audit available.

ED 259. Multicultural Education: Applications. 3 Credits.
Provides an in depth view into multicultural educational issues in the K-12 setting today. Gain skills to develop cultural appropriate pedagogy, materials and curriculum in order to serve the needs of an increasingly diverse US educational system. Prerequisite: WR 115, RD 115. Audit available.

ED 260. Multicultural Literature for Children and Young Adults. 3 Credits.
Introduces multicultural literature for early childhood through young adult. Emphasizes contemporary literature representing a range of cultures in the U.S. as well as world-wide. Covers selection and evaluation, cultural considerations, and book awards. Prerequisites: Placement test scores qualifying student to enroll into WR 121. Audit available.

ED 263. Portfolio Development. 2 Credits.
This is a capstone course for the Paraeducator and Library/Media Certificate programs. Students will prepare professional portfolios that demonstrate their competencies in the following areas: Developmental Disabilities, Intellectual Disabilities, Multiple Disabilities, Autism Spectrum Disorder, Gifted Students, English Language Learners, Special Education, and General Education. Prerequisite: WR 115, RD 115 and MTH 60 or equivalent placement test scores. Audit available.

ED 264. Portfolio Development II: AAS Paraeducator Addition. 1 Credit.
Covers how to prepare a professional portfolio that documents the outcomes and requirements for the AAS degree in Paraeducation. Prerequisite/Concurrent: ED 263.

ED 265. Library Capstone Portfolio. 2 Credits.
Provides an opportunity for reflection on program outcomes and preparation of a professional portfolio that demonstrate the competencies developed during the program. Capstone course for the Library Assistant Certificate program. Prerequisite: Permission of Department/Instructor.

ED 268. Introduction to Developmental Disabilities. 3 Credits.
Provides background information on techniques, expected achievement levels, intellectual functioning, goals and objectives for working with students with developmental disabilities. Emphasizes physical and mental development from birth and familiarity with the known causes, classifications and terminology used in the field of special education. Audit available.

ED 269. Introduction to the Teaching Learning Disabled Student. 3 Credits.
Defines terms associated with learning disabilities and behavior disorders. Includes diagnostic procedures, remedial programs and teaching techniques. Audit available.

ED 270. Practicum I. 3 Credits.
Spend a minimum of 100 hours in a supervised field experience. Participate in group debriefing sessions as arranged by PCC supervisor. Prerequisite: Permission of Department/Instructor. Audit available.

ED 271. Practicum II. 3 Credits.
Spend a minimum of 100 hours in a supervised field experience. Participate in group debriefing sessions as arranged by PCC supervisor. Prerequisite: Permission of Department/Instructor. Audit available.

ED 272. Practicum III. 3 Credits.
Spend a minimum of 100 hours in a supervised field experience. Participate in group debriefing sessions as arranged by PCC supervisor. Prerequisite: Permission of Department/Instructor. Audit available.

ED 281. Philosophy and Techniques of Teaching at a Community College. 3 Credits.
Develops the capacity to effectively use and manage instructional resources in achieving the learning objectives of vocational programs. Audit available.

ED 290. Sheltered Instruction for English Language Learners. 3 Credits.
Introduces sheltered instruction strategies that will modify content for English Language Learners in the k-12 classroom. Provides opportunities to explore curriculum development and the needs of the learner. Examines the impact of immigrant culture on the ELL experience. Prerequisite: RD 115 and WR 115. Audit available.

ED 291. Bilingual and ESL Strategies. 3 Credits.
In depth approach to analyzing best practices and teaching strategies for assisting English language learners in the K-12 setting. Enhances students' ability to assess, design and provide appropriate instruction and communication for and to ELLs. Explores relevant linguistic and cultural theories and issues, and offers students a chance to connect theory to practice. Prerequisite: WR 115, RD 115. Audit available.

ED 298A. Special Projects in Education. 1 Credit.
Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

ED 298B. Special Projects in Education. 2 Credits.
Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

ED 298C. Special Projects in Education. 3 Credits.
Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

ED 298D. Special Projects in Education. 4 Credits.
Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

ED 298E. Special Projects in Education. 5 Credits.
Designed to allow the student to do an individualized study in the area of education. The student is required to develop a learning contract with the assigned instructor. Instructor permission required for registration in this course. Audit available.

ELECTRICAL TRADES

ELT 110. Electricity for Non-Electricians. 2 Credits.
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. Audit available.

ELT 120. OSHA 10 Hour Safety Training. 1 Credit.
Introduces OSHA General Duty Clause (5)(a)(1) General Safety and Health Protections, Competent Person, Qualified Person, Health Hazards in Construction, Electrical, Fall Protection, Stairways and Ladders, Scaffolding, Motor Vehicles, Hand & Power Tools, and Excavations. Awards a 10-hour Construction Outreach Completion Card from OSHA. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 125. Basic Programmable Controllers. 2 Credits.
Develops the student's understanding of the complete operation of a variety of programmable controllers. The applications, operations, and programming of PLC's are the areas of study with the main emphasis on programming (computers will be used as programmers). This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: (FMT 111 or TE 9237); BA 131. Audit available.

ELT 126. Intermediate Programmable Controllers (PC Based). 2 Credits.
Prepares advanced features of programmable controllers, including designing, monitoring, and editing programs with practical hands-on experience. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 125 or TE 9126 Audit available.

ELT 150. Fiber Optics I. 4 Credits.
Origins of Fiber Optics and Fiber Optic solutions for communications. Introduction to design and plant cabling, cable preparation, pulling techniques, termination, splices, and cable testing. Includes cable and closure preparation, fiber cleaving and splicing. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.
ELT 151. Fiber Optics II. 4 Credits.
Develops skills in fiber optics connections and testing. Connector assembly and polishing techniques, system losses and testing. Fault location, repair and restoration are included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 150 or TE 9101. Audit available.

ELT 152. Fiber Optics: Inside/Outside Plant. 4 Credits.
Application for Fixed Access includes the use of special splicing techniques, enclosures, test sets and fault locating equipment. Placing, splicing, termination and testing of fiber optic cables in campus applications is included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 151 or TE 9102 Audit available.

ELT 153. Fiber Optics: Outside Plant. 4 Credits.
Application is ready access, pressurized, direct buried, and pedestal-type enclosures, and the use of special splicing techniques. Includes test sets and fault locating equipment. Placing, splicing, and testing of fiber optic cables in aerial applications is included. Prerequisites: ELT 151 or TE 9102. Audit available.

ELT 201. Electrical Motor Control. 2 Credits.
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 simulate motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 201 and APR 201 cannot both be taken for credit. Prerequisites: FMT 111 or APR 104 or Department Permission. Audit available.

ELT 204. Adjustable Speed Drives. 2 Credits.
Covers theory, operation, installation, and maintenance of adjustable speed motor drives. Introduces drive applications and selection for industrial, utility, and commercial structures. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

ELT 210. Electricity for the Non-Electrician II. 2 Credits.
This class is a direct continuation of the skills developed in Electricity for the Non-Electrician, incorporating additional wiring practices, materials and troubleshooting methods. Emphasizing safety and workmanship as well as electrical theory and building codes as they apply to the homeowner. Prerequisites: ELT 110 or TE 9071. Audit available.

ELT 220. OSHA 30 Hr Safety Training. 3 Credits.
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 intro to 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 lifesaving 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. Audit available.

ELT 225. Advanced Programmable Controllers, PC Based. 2 Credits.
Covers advanced features of Programming controllers including designing, monitoring, troubleshooting and editing techniques with practical hands-on experience. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 126 or TE 9121. Audit available.

ELT 226. Basic Human Machine Interface (HMI) Program. 2 Credits.
Develops the student’s understanding of the basic operation and programming techniques of Human Machine Interface Devices. The applications, operations, and programming of HMIs are the areas of study with the main emphasis on programming. Computers will be used to program. Prerequisites: ELT 225 or TE 9127. Audit available.

ELT 230. National Electrical Code. 3 Credits.
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. Audit available.

ELT 231. National Electrical Code II. 3 Credits.
Provides electricians for state examination as prescribed by Oregon State Building Codes Division. Includes code explanations and application. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 231 and APR 231 cannot both be taken for credit. Audit available.

ELT 250. AMP ACT I. 1 Credit.
Includes an overview of the wiring systems, and in-depth review of the ANSI/TIA/EIA and ISO/IEC industry standards, and a discussion and hands-on practicum on the rough-in, installation, management, and termination of shielded and unshielded twisted pair and optical fiber cabling systems. The course is about 85% hands-on and is designed with a systems approach instruction method. Successful completion of the course examination will certify you as an AMP Registered Installer. Audit available.

ELT 251. AMP ACT II. 1 Credit.
Students will obtain the experience necessary to certify and document twisted pair and optical fiber cable plants based on established industry standards, which include ANSI/TIA/EIA-568A, TSB-67, ANSI/EIA/TIA-568-14A and ANSI/TIA/EIA-562-7. 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 9011. Audit available.

ELT 252. AMP ACT III. 1 Credit.
Designed for individuals involved in the design and installation of premises cabling systems. This course progresses through a step-by-step process from the initial design analysis through the final actual project presentation based on the guidelines of the TIA/EIA/ISO standards. The student design decision rationale regarding network platforms and technologies, cabling architectures, and media selection is discussed in detail. Successful completion of the course examination will certify you as an AMP Registered Designer. Audit available.

ELT 280. Electrical Code Changes. 0.5 Credits.
Emphasizes how code changes from the previous adopted code differs from the newly adopted codes. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 281. NEC Ratings. 0.5 Credits.
Includes the study of explanation of approved Underwriter labs and testing standards as related to the purchase and use of electrical equipment. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 282. Grounding and Bonding. 0.5 Credits.
The study of Article 250 in the NEC. Covers what has to be grounded and bonded and standards and rules associated with such. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 283. Code Calculations. 0.5 Credits.
Provides licensed electricians with current National Electric Code procedures on how to calculate electrical loads and applications. Includes tables to calculate loads and proper use of applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 284. Motor Controls. 0.5 Credits.
Focuses on code articles related to motor controlled systems, starters, controllers and transformers. Safety also covered. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

EET 101. Introduction to Electronic Testing Equipment/Soldering/Tools. 1 Credit.
Introduces the operation and use of various types of equipment and tools used in electronic technology including oscilloscope, function generator, DMM, and voltage source, calculator, and EXCEL. Uses software controls to obtain and analyze data available on this equipment, and Spice to perform simulation. Prerequisite: WR 121; Prerequisite/concurrent MTH 111. Audit available.

EET 110. Introduction to Renewable Energy. 3 Credits.
Introduces sustainability and renewable energy (RE) sources and technologies including PV and solar thermal, geothermal, biomass, biodiesel, fuel cell, wind, hydro, ocean wave, photovoltaic, etc. Covers RE environmental issues, demand and distribution management, and green and RE career opportunities, etc. Prerequisites: WR 121; prerequisite/concurrent MTH 111; or department approval. Audit available.
EET 111. Electrical Circuit Analysis I. 5 Credits.
Covers International System of Units, engineering notation and prefixes, definitions of current, voltage, resistance, power, work and efficiency. Includes DC circuits: Ohm’s and Kirchhoff’s Laws; DC resistive networks, Thévenin and Norton equivalent circuits, node voltage and mesh current analysis methods; Includes a 3-hour per week laboratory session. Prerequisite/concurrent: EET 101 or department approval. Audit available.

EET 112. Electrical Circuit Analysis II. 5 Credits.
Covers Capacitance; Inductance; RC/RL transient response; sinusoidal waveforms; reactance and impedance; AC power. Phasor analysis of RLC circuits; node voltage and mesh current analysis; superposition, Thévenin’s and Norton’s network theorems. Includes a 3-hour per week laboratory. Prerequisite: EET 111. Prerequisite/concurrent: MTH 111. Audit available.

EET 113. Electrical Power. 5 Credits.
Covers ac power, series and parallel resonant circuits, Q and selectivity, RL and RC filters, decibels, transfer functions and Bode diagrams, transformers, three phase power distribution, introduction to motors/ generators/motor control. Fourier series and transform applied to circuit analysis. Prerequisite: EET 112. Audit available.

EET 121. Digital Systems I. 3 Credits.
Explores basic digital electronics concepts. Includes number systems, Boolean algebra, logic simplification, and circuit troubleshooting. Includes analysis of digital logic using digital circuit simulations and basic spreadsheet skills. Prerequisite/concurrent: MTH 111, EET 101, EET 111. Audit available.

EET 122. Digital Systems II: Computing Systems. 4 Credits.
Explores electronic hardware and circuits to store, move and calculate data. Investigates state machines, logic optimization, and analysis of digital systems. Includes modification, troubleshooting and analysis of circuits with a programmable logic device (PLD) using a hardware descriptive language (HDL), such as VHDL or Verilog. Prerequisite: EET 121. Audit available.

EET 123. Digital Systems III: Mixed-Signal Systems. 4 Credits.
Combines digital and analog circuit topologies. Explores Analog/Digital conversion and memory circuits. Includes modification, troubleshooting and analysis of circuits with a programmable logic device (PLD) using a hardware descriptive language (HDL), such as VHDL or Verilog. Prerequisite: EET 122. Audit available.

EET 178. Computing Environments for Technicians. 4 Credits.
Surveys complex computing environments where computers, operating systems, programming languages and network connections integrate. Includes projects involving command line, terminal applications, programming, hardware identification, troubleshooting and system analysis. Includes a 3-hour per week laboratory. Prerequisite: EET 122 or MT 122. Audit available.

EET 179. Fuel Cell Systems. 3 Credits.
Introduces fuel cell technologies used for distributed power generation. Covers technical aspects of fuel cell processing, fuel cell stacks, power electronics, balance of plant (BOP), tools for performance evaluation and troubleshooting, fuel cell codes and permitting, safety procedures, career outlook, and renewable versus alternative energy technologies. Includes laboratory projects, as applications of theoretical concepts. Prerequisite/concurrent: MTH 111 or CMET 123. Audit available.

EET 188. Industrial Safety. 1 Credit.
Covers safety practices in the electronics industry. Includes electrical safety, HAZMAT, flammable and combustible liquids, safe handling of electronic components in the manufacturing environment including ESD control, product testing/certification, blood borne pathogens, fire safety, laser and radiation safety. Audit available.

EET 221. Semiconductor Devices and Circuits. 5 Credits.
Introduction to semiconductor devices. Characteristics and biasing of diodes and transistors. Design and analysis of circuits using diodes, bipolar transistors, and field effect transistors. Application of transistors as amplifiers and switches. A 3-hour per week laboratory includes the application of computer tools in circuit design, evaluation, and analysis. Prerequisite: EET 113, MTH 112. Audit available.

EET 222. Operational Amplifier Circuits. 5 Credits.
Characteristics and applications of operational amplifiers (op-amps). Design and analysis of op-amp amplifiers, comparators, voltage and current regulators, summers, integrators, and differentiators. Frequency response of op-amp circuits. Applications of the op-amp in power supplies and control systems. A 3-hour per week laboratory includes project design, evaluation, and documentation. Use of computer tools. Prerequisites: EET 221 Audit available.

EET 223. RF Communications Circuits. 5 Credits.
Introduces basic transmission line concepts. Introduction to阻抗电路 analysis, and RF circuits analysis. Frequency response and system stability. Includes a 3-hour per week laboratory. Prerequisite: EET 222 Audit available.

EET 241. Programming for Electronics. 4 Credits.
Introduces programming for electronics applications with emphasis on instrumentation control, robotics and automation. Includes writing programs, as well as troubleshooting and modifying existing code in assembly, C and/or specialized high-level computer languages, such as LabVIEW. Prerequisites: EET 123 and CS 153U or CS 161. Recommended: EET 176. Audit available.

EET 242. Microcontroller and Embedded Systems. 4 Credits.
Introduces the use, characterization, analysis, troubleshooting methods and programming of microcontrollers and embedded systems with a focus on application. Includes a 3-hour per week laboratory. Prerequisite: CS 161 and EET 123. Audit available.

EET 254. Electronic Engineering Technology Seminar I. 1 Credit.
Topics covered include information on finding employment in the electronics industry, writing resumes and cover letters, and practice interviewing. Prerequisite: EET 113. Audit available.

EET 255. Industrial Control Systems. 4 Credits.
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. Prerequisite: EET 241 or EET 242. Prerequisite or concurrent: EET 222. Audit available.

EET 256. Capstone Project. 2 Credits.
Students learn how to work as teams on instructor approved projects. Students can choose projects in electronics, renewable energy systems, wireless/data communications and automation/robotics. Typical project activities include the research and design phase, the execution phase, and the project report phase. A written report and oral presentation is required. Prerequisite: EET 241 or EET 242; and EET 222 Audit available.

EET 260. Biomedical Equipment I. 4 Credits.
Introduces the fundamentals of medical instrumentation, bioelectric signals and electrodes, recording systems, biomedical recorders, patient monitoring systems, arhythmia and ambulatory monitoring instruments, fetal monitoring instruments, biomedial telemetry and telemedicine, oximeters, blood flowmeter, cardiac output measurement, pulmonary function analyzers, laboratory equipment, audiometers, and patient safety. Prerequisite/Concurrent: EET 221. Prerequisite: EET 123, MP 111 and (BI 122 or BI 233). Audit available.

EET 261. Biomedical Equipment II. 4 Credits.
Introduction to modern imaging systems, pacemakers, defibrillators, surgical equipment, lasers, physiotherapy and electrotherapy equipment, hemodialysis machines, lithotriptors, anesthesis machines, ventilators, radiotherapy equipment and automated drug delivery systems. Prerequisites: EET 260. Audit available.

EET 269. Wind Mechanics. 3 Credits.
Introduces mechanical systems that make up subsystems of today’s wind turbine. Basic hydraulics and pneumatics, wind power production as well as other wind power related topics will be covered. Prerequisite: Placement into WR 115. Prerequisite/concurrent: EET 113. Audit available.

EET 272. Motors and Generators. 3 Credits.
Covers operating principles and characteristics of AC and DC motors and generators. Single-phase, split-phase, and three phase AC motors. Synchronous and asynchronous generators. Control devices and control circuits, ladder diagrams and PLC’s. Prerequisite: EET 221. Audit available.

EET 273. Electronic Control Systems. 3 Credits.
Covers electronic control systems, open-loop and closed-loop, proportional, integral, derivative, PI, and PID control modes, power control devices, relays, transistors, thyristors, and sensors. Topics include temperature control, DC motor control, and stepper motor control. Lab exercises include temperature control and motor control circuits. Prerequisite: EET 222. Audit available.

EET 280A. Cooperative Education: Electronics Engineering Technology. 1-5 Credit.
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.
EM 101. Introduction to Emergency Services. 4 Credits.
Covers the concept of emergency telecommunications. Includes the use of emergency communications equipment and standard operating procedures to simulate actual emergency calls and situations. Audit available.

EM 111. Communication Center Operations - Intermediate Skills. 3 Credits.
Builds on skills learned in ETC 110 to provide practical experience for industry related multitasking, problem solving and customer service in a diverse market. Includes the use of the simulation lab, multi-line phones and radios and the application of policies, procedures and protocols. Prerequisite: ETC 110. Audit available.

EET 280A. Cooperative Education: Emergency TeleCommunicator. 1-6 Credits.
Provides the opportunity for students to work in 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.

EM 102. Emergency Medical Dispatch Overview. 2 Credits.
Covers Emergency Medical Dispatch procedures including emergency medical pre-arrival instructions to assist the patient and the public. Examines the concept of emergency telecommunications. Includes the operation and components of two-way radio and computer systems. Covers the operation of policies, procedures and protocols in the handling of specific customer service situations. Prerequisite: EM 111. Audit available.

EM 124. Radio Communications Lab. 1 Credit.
Integrates practice of communication via two-way radio. Continues developing multi-tasking skills, accurate CAD documentation skills with information provided by field units and tracking field status over the radio. Prerequisites: ETC 110. Audit available.

ETC 202. Law Enforcement Data System (LEDS), 1 Credit.
Introduces the State of Oregon Law Enforcement Data System, which provides computer databases for state and local law enforcement and the Criminal Justice Information System, interface with national computer systems. Completion of the LEDS Training Guide provides state certification at the Inquiry level. Students must complete a Criminal Background check and be free of any felony or drug related convictions. Prerequisite: ETC 103. Audit available.

EM 125. Introduction to Fire Communications. 2 Credits.
Introduces fire call taking and dispatching. Includes the use of emergency communications equipment and the application of policies, procedures and protocols in the handling of fire related situations. Prerequisite: ETC 111.

ETC 201. Law Enforcement Data System (LEDS), 1 Credit.
Introduces the State of Oregon Law Enforcement Data System, which provides computer databases for state and local law enforcement and the Criminal Justice Information System, interface with national computer systems. Completion of the LEDS Training Guide provides state certification at the Inquiry level. Students must complete a Criminal Background check and be free of any felony or drug related convictions. Prerequisite: ETC 103. Audit available.

ETC 203. Tactical Dispatching for High Risk Incidents. 1 Credit.
Introduces the concept of Tactical Dispatching, which involves high risk/low frequency crimes and situations such as kidnappings, hostage situations, and suicidal or mentally unstable callers. Prerequisite: ETC 104. Audit Available.

EM 201. Disaster Planning & Preparedness. 4 Credits.
Introduces disaster preparedness for individuals, businesses, communities and government. Examines the design and preparation of disaster preparedness plans for individuals and local jurisdictions. Examines the responsibilities between government and non-governmental organizations and services available in disasters. Prerequisites: Placement into WR 121, and EM 110 OR EM 112 or EM 114. Audit available.

EM 202. Hazard Mitigation. 3 Credits.
Covers the identification of hazard risks and associated mitigation programs and strategies, includes how to identify local mitigation opportunities and cost effective solutions. Prerequisite: WR 121 and EM 110 or EM 112 or EM 114. Audit available.
EM 203. Disaster Response I. 4 Credits.
Covers principles that promote effective disaster response practices in operations and management. Examines the nature of disasters, the context of response operations, and the roles and responsibilities of individuals and organizations. Prerequisite: WR 121 and EM 110 or EM 112 or EM 114. Audit available.

EM 204. Disaster Response II. 4 Credits.
Examines response operations and management with a focus on the Incident Command System, area command, multi-agency coordination systems, joint information system and other systems. Prerequisite: WR 121 and EM 110 or EM 112 or EM 114. Audit available.

EM 205. Disaster Recovery. 3 Credits.
Covers the basic concepts and operational procedures and authorities involved in recovering from major disasters. Addresses Federal, State, and local government roles and responsibilities in major disaster recovery work, with an emphasis on government coordination and solutions to problems that frequently arise in recovery operations. Prerequisites: WR 121 and EM 110 or EM 112 or EM 114. Audit available.

EM 211. Public Policy & Law in Emergency Management. 3 Credits.
Addresses the critical dependence of modern organizations on disaster vulnerable technology, such as management information, communications, and computerized process control systems. Students will have the opportunity to produce working plans that provide preventative measures to minimize disaster impact, provide an organized response, and ensure business continuity during recovery. Prerequisites: EM 114 & WR 121. Audit available.

EM 222. Disaster Exercise Design and Evaluation. 3 Credits.
Provides the student with an understanding of how different types of disaster exercises are written and conducted. Exercises are a necessary training tool for all emergency response organizations to test new skills, technology and competency. Prerequisites: EM 203, EM 204, and EM 205. Audit available.

EM 223. Terrorism. 3 Credits.
Introduces the issues of terrorism, the organizations and key characters in both international and domestic terror. The course also introduces the various agents and delivery systems of weapons of mass destruction. Recommend: WR 115. Audit available.

EM 228. Emergency Management: Capstone. 3 Credits.
Covers the creation of a portfolio, documenting coursework, activities, education and experience history. Includes the completion of a comprehensive personal history background. Provides discipline specific application process and discipline specific oral interview questions. Department permission required. Prerequisites: Placement into WR 121; EM 110 or EM 112 or EM 114. Audit available.

EMERGENCY MEDICAL SERVICES

EMS 100. Introduction to Emergency Medical Services. 3 Credits.
Covers the roles and responsibilities of the EMT - emergency medical services system, medical-legal considerations, major incident response, hazardous materials awareness, stress management, and blood-borne pathogens. Audit available.

EMS 105. EMT Part I. 5 Credits.
Develops skills for the recognition of symptoms of illness and injuries and proper procedures of emergency care. Requires passing criminal background check and drug screen before placement into mandatory clinical observation in hospital emergency department and ambulance ride-along experience. Part 1 of the 2-part Oregon EMT course. Department permission required. Prerequisite: WR 115; MTH 20; RD 90; current HCP CPR card.

EMS 106. EMT Part II. 5 Credits.
Continues EMS 105. Oregon EMT preparation. Includes preparation for state and national certification exams. Department permission required. Prerequisite: Successful completion of EMS 105 at PCC within the last year; current HCP CPR card.

EMS 113. Emergency Response Communication/Documentation. 2 Credits.
Covers principles of therapeutic communication, oral, written, and electronic communications in the provision of EMS. Includes: documentation of elements of patient assessment, care, transport, communication systems, radio types, reports, codes, and correct techniques. Prerequisites: EMS 105 and EMS 106, WR 121. Recommended: SP 111 or COMM 111. Audit available.

EMS 114. Emergency Response Patient Transportation. 2 Credits.
Covers ambulance operations, laws, maintenance and safety, emergency response driving and route planning. Prerequisites: EMS 105, WR 121. Recommended: EMS 106.

EMS 115. Crisis Intervention. 3 Credits.
Covers intervention in behavioral crises of sudden death, suicide, rape, murder, vehicle accidents, disease, trauma, and child abuse. Includes resources, supporting behavioral patterns, and handling emotional stress of the individual as well as coping with emotional conflict within one’s self. Prerequisite: WR 121. Recommended: EMS 106 and SP111 or COMM 111. Audit available.

EMS 116. Emergency Medical Services Rescue. 3 Credits.
Covers the elementary procedures of rescue practices, systems, components, support and control of rescue operations including basic rescue tools. Introduces techniques and tools of patient extrication, emphasizing application to traffic accidents and low angle rescue. Prerequisites: EMS 100, EMS 105, WR 121. Recommended: EMS 106, SP 111 or COMM 111.

EMS 118. EMS Medical Terminology. 3 Credits.
Analysis of anatomical roots, prefixes, and suffixes, and Greek and Latin verbs and adjectives. Helps build a medical vocabulary. Examination of representative anatomical structures, diseases, procedures, tumors, and descriptive terms by simple analysis of words. Audit available.

EMS 120. Emergency Medical Services: First Responder. 3 Credits.
For those who are usually the first person at the scene of a trauma or medical emergencies including law enforcement, fire department personnel, etc. Knowledge and skills are developed to provide basic care for trauma, medical and environmental emergencies, evaluation of scene and patients; and appropriate access and use of the Emergency Medical Services System. Must be 16 years of age. Audit available.

EMS 240. Paramedic I. 12 Credits.
Didactic portion covers illness and injury prevention, medical legal issues and well-being of the paramedic. Patient care topics include advanced airway, medication math, general principles of pathophysiology of shock, trauma assessment, kinematics, pharmacology, toxicology, drug and alcohol abuse, infection disease, endocrinology, OB/GYN, neonatology, cardiovascular system, EKG monitoring. There will be associated practical labs. Students will be certified in Pre-Hospital Life Support (PHTLS). Department permission required. Prerequisite: WR 121, MTH 60/65, BI 101 BI 231, BI 232, EMS 100, EMS 106, EMS 113, EMS 114, EMS 115, EMS 116, EMS 118. Audit available.

EMS 242. Paramedic II. 9 Credits.
Didactic portion covers EKG review, pediatric, geriatric, acute abdomen, burns, psychiatric disorders, dealing with death and the dying, crime scene preservation, Hazmat awareness, environmental conditions, advanced airway. Students will be certified in Pediatric Education for Pre-hospital Professional (PEPP) and Advance Cardiac Life Support (ACLS). There will be associated practical labs. Department permission required. Prerequisite: EMS 240. Audit available.

EMS 244. Paramedic Clinical Internship I. 3 Credits.
Begin in-hospital clinical experiences including direct patient care responsibilities necessary for completion of the educational objectives. Patients are in a hospital/clinical setting with disease and injury conditions comparable to those the student will experience in the pre-hospital care situation. Department permission required. Prerequisite: EMS 240.

EMS 246. Paramedic Clinical Internship II. 5 Credits.
Complete in-hospital clinical experience to include direct patient care responsibilities necessary for completion of the program’s objectives. The patients in the hospital/clinical setting shall have disease and injury conditions comparable to those the student will experience in the pre-hospital care situation. Department permission required. Prerequisite: EMS 244.

EMS 248. Paramedic Field Internship I. 2 Credits.
Completes field experience necessary to fulfill the required hours and calls necessary for state certification. Department permission required. Prerequisite: EMS 248.

EMS 250. Paramedic Field Internship II. 7 Credits.
Completes the field experience necessary to fulfill the required hours and calls necessary for state certification. Department permission required. Prerequisite: EMS 248.

EMS 252. Paramedic III. 2 Credits.
Students successfully complete course final written and practical exam and prepare for the State and National Registry written and practical exam. Department permission required. Prerequisite: EMS 248. Audit available.
ENGR 100. Exploring Engineering. 1 Credit.
Focuses on engineering careers, and what engineers "do." Presents various engineering disciplines and associated occupations through class discussions, presentations by practicing engineers, laboratory activities, and viewing of occupational videos. Designed to inform students of the attributes of a career in engineering and the academic preparation it requires. Audit available.

ENGR 101. Engineering Fundamentals. 4 Credits.
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. Audit available.

ENGR 102. Engineering Graphics. 3 Credits.
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: Department approval or ENGR 101. Audit available.

ENGR 114. Engineering Programming. 4 Credits.
Introduces structured programming with applications to engineering problems. Prerequisite: ENGR 101 or department-approved equivalent. Audit available.

ENGR 171. Introduction to Digital Logic Design. 5 Credits.
Introduces analysis and computation of basic logic problems and circuits. Covers number systems, Boolean algebra, and logic circuit simplification techniques to produce simplified logic for minimal realization. Includes the creation of designs utilizing basic logic families, flip-flops, registers, and/or counters. Prerequisites/Concurrent: ENGR 221. Audit available.

ENGR 211. Statics. 4 Credits.
Analysis of forces acting on particles and rigid bodies. Force systems, centroids, and moments of inertia are covered. Scientific, programmable, graphing calculator required. Prerequisites: MTH 252, PHY 211; ENGR 101. Audit available.

ENGR 212. Dynamics. 4 Credits.
Kinematics and kinetics of particles and rigid bodies are analyzed by Newton's laws, work-energy and impulse-momentum methods. Prerequisite: ENGR 211. Audit available.

ENGR 213. Strength of Materials. 4 Credits.
Relationships between stress and strain in deformable solids is 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. Audit available.

ENGR 221. Electrical Circuits I. 5 Credits.
Introduces students to basic circuit elements and circuit analysis techniques. Covers Ohm’s and Kirchhoff’s Laws, network theorems, node voltage analysis and mesh current analysis. Operational amplifiers, inductors, capacitors, RC and RL transient circuits are also covered. Circuit simulation, math analysis software, and laboratory experiments are incorporated to solidify classroom theory and practice. Recommended: MTH 253 and PHY 213. Prerequisites: ENGR 101, MTH 252. Audit available.

ENGR 222. Electrical Circuits II. 5 Credits.
Covers RLC circuits, transformers, AC power, and three phase power. Explores steady state sinusoidal analysis and phasor techniques. Introduces the Laplace Transform. Also incorporated is circuit simulation, math analysis software, and laboratory experiments to solidify classroom theory and practice. Prerequisite: ENGR 221 Audit available.

ENGR 223. Electrical Circuits III. 5 Credits.
Covers Capacitor Transform analysis. The transfer function, convolution, bode plots, and Fourier series are used to analyze circuits. Passive and active filters are designed and analyzed using these new circuit analysis techniques. Circuit simulation, math analysis software, and laboratory experiments are incorporated to solidify classroom theory and practice. Prerequisite: ENGR 222 Prerequisite or concurrent enrollment: MTH 252. Audit available.

ENGR 226. Plane Surveying. 4 Credits.
Introduces basic concepts of plane surveying. Includes use of tape, level, and electronic total station, along with horizontal and vertical control networks. Includes network calculations and adjustments, angles and bearings, and topographic surveying and mapping. Prerequisite: ENGR 102 and (MTH 112 or CMET 123). Audit available.

ENGR 231. Material Science. 4 Credits.
Selection of materials for modern engineering applications. Structure and properties of metals, ceramics and polymers starting with fundamental atomic arrangements. Microstructural control through terminal and mechanical processing and effects of service environment are covered. Prerequisites: PHY 211; MTH 252; (CH 201 or 222). Audit available.

ENGR 262. Manufacturing Processes. 4 Credits.
Introduces the interaction of design with industrial materials and processes. Emphasizes the connection of design, materials, and processes with technical and economic feasibility, trade-offs, and automation. Prerequisites: (CMET121 and 122); or (ENGR101 and PHY211). Audit available.

ENGR 271. Digital Logic Design. 5 Credits.
Introduces design and analysis of advanced digital systems. Covers development and integration of shift registers, memory, and programmable logic devices. Explores microprocessors, Digital Signal Processing, and/or integrated circuit technologies. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and ENGR 171.

ENGR 275. Microprocessor Systems. 4 Credits.
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. Audit available.

ENGR 280A. Cooperative Education: Engineering. 1-5 Credit.
For students employed in an approved co-op education position with a local company. Credits do not ordinarily transfer for an engineering degree. Department permission required. Audit available.

ENGLISH

ENG 104. Introduction to Literature (Fiction). 4 Credits.
Enhances enjoyment of various forms of fictional prose, increases understanding of the conventions of fiction and various forms of storytelling, and encourages exploration of the diversity of human experience. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 105. Introduction to Literature (Drama). 4 Credits.
Enhances enjoyment of plays as literature, including tragedies and comedies; increases understanding of the conventions of drama and the theater; and encourages exploration of the diversity of human experience. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 106. Introduction to Literature (Poetry). 4 Credits.
Enhances enjoyment of poetry, increases understanding of poetic elements, conventions and forms, and encourages exploration of the diversity of human experience. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 107. World Literature. 4 Credits.
Introduces broad spectrum of literature in translation that begins in antiquity and concludes at the dawn of the Renaissance. Includes works of fiction, poetry, drama and non-fiction. Examines the uniqueness and interconnectedness of literature from a variety of worldwide traditions, both western and non-western. This series (ENG 107-108) does not have to be taken in sequence. The first of a two course survey of World literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 108. World Literature. 4 Credits.
Introduces a broad spectrum of literature in translation that begins in the Renaissance and concludes at the present. Includes works of fiction, poetry, drama, and non-fiction. Examines the uniqueness and interconnectedness of literature from a variety of worldwide traditions, both western and non-western. This series (ENG 107-108) does not have to be taken in sequence. The second of a two-course survey of World literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ENG 195. Film Studies: Film as Art. 4 Credits.
Enhances understanding of film through analysis of film history and form. Develops visual literacy and analysis skills by offering a range of tools to study any film. Analyze ways in which a film may both contribute and react to its time and culture; analyze film through studying the techniques by which it was made; and substantiate observations with examples taken from film tradition and from the film itself. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 196. Film Studies: Directors. 4 Credits.
Enhances understanding of film through analysis of directorial decisions and film techniques. Develops visual literacy and analysis skills by offering a range of tools to study any film. Analyze ways in which directorial decisions may affect an individual film and viewer; situate a film within a director’s body of work; analyze ways in which it may both contribute and react to its time and culture; and substantiate observations with examples taken from the film tradition and from the film itself. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 197. Film Studies: Contemporary Themes and Genres. 4 Credits.
Enhances understanding of film through analysis of contemporary filmmaking, narrative techniques, genres, themes and critical approaches. Develops visual literacy and analysis skills by offering a range of tools to study any film. Analyze contemporary film techniques and the ways in which the films may both contribute and react to their time and culture; study contemporary film theory and substantiate observations with examples taken from the film tradition and from the film itself. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 201. Shakespeare: Early Works. 4 Credits.
Explores the development of Shakespeare’s art and contribution to literature, culture, and the English language, with a focus on the earlier histories, tragedies, comedies, and non-dramatic poetry. Introduces the study of Shakespeare’s dramatic techniques, character development, historical and cultural setting, and language. Recommended prior coursework: ENG 105 and 106. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 202. Shakespeare: Later Works. 4 Credits.
Explores the development of Shakespeare’s art and contribution to literature, culture, and the English language, with a focus on the later histories, tragedies, comedies, and non-dramatic poetry. Introduces the study of Shakespeare’s dramatic techniques, character development, historical and cultural setting, and language. Recommended prior coursework: ENG 105, 106 and 201. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 204. Survey of English Literature. 4 Credits.
The first half of a two-course survey of British literature that includes English 205. English 204 introduces students to British literature from the Anglo-Saxon and Celtic beginnings through the 18th century. The series need not be taken in sequence. Recommended: ENG 104, 105 and/or 106. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 205. Survey of English Literature. 4 Credits.
The second half of a two-course survey of British literature that includes English 204. English 205 introduces students to British literature from the 19th century to the present. The series need not be taken in sequence. Recommended: ENG 104, 105 and/or 106. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 207. World Literature - Asian (India). 4 Credits.
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 Tagore, Narayan, Vedi, and Arundhati Roy. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 208. World Literature - Asian (China). 4 Credits.
Introduces Chinese literature translated into English. Includes the oldest texts (ca. 1000 BCE) to contemporary works. Includes poetry, fiction, nonfiction, drama, and film. Examines the cultural and historical importance of Confucianism, Daoism, and Buddhism on Chinese literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 209. World Literature - Asian (Japan). 4 Credits.
Introduces a range of Japanese texts and films in order to explore the artistic, social, political, and historical characteristics of Japanese literature from the earliest poems to contemporary novels. Explores movements in literary and artistic traditions from multiple periods (e.g., Heian, Meiji) and analyzes how texts emphasize or resist the values of each historical moment. Considers issues of social class, religion, and aesthetics as they apply to creative works. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 210. World Literature - Latin America. 4 Credits.
Explores fiction, creative non-fiction, poetry, drama, myth, and other texts from Latin America. Includes works from many cultures and ethnicities from Latin America, including indigenous peoples. All readings are in English. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 211. Literature of the Northwest. 4 Credits.
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 placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 212. Biography and Autobiography. 4 Credits.
Covers the study of biographies, biographical memoirs, and journals as works of literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 213. Latin American Literature. 4 Credits.
Explores fiction, creative non-fiction, poetry, drama, myth, and other texts from Latin America. Includes works from many cultures and ethnicities from Latin America, including indigenous peoples. All readings are in English. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 214. Literature of Genocide. 4 Credits.
Introduces a range of international texts and films pertaining to genocide in order to explore the social, cultural, political, and historical conditions that have led to genocide, the conditions it creates for its victims, and its aftermath. Explores experiences of individuals, later generations, and nations, including issues of exile and reconciliation. Considers memoirs, fiction, poetry, literary nonfiction, documentaries and feature films created by survivors and others. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 215. Teen and Children’s Literature. 4 Credits.
Explores a wide range of literature written for children and teens and introduces the history of this literature focusing on American and British writing as well as international and multicultural traditions. Examines the relationships between literature for children and teens and literature for adults, the relationship between text and illustrations, and other issues and controversies concerning children’s literature such as the didactic use of text and censorship. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 222. Images of Women in Literature. 4 Credits.
Explores images of women as they appear in a diverse range of texts from across a variety of cultures and historical periods. Focuses on how both men and women have imagined and represented femininity and femaleness in ways that can challenge, reinforce and/or reconfigure culturally-based perceptions, behaviors and practices. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ENG 230. Environmental Literature. 4 Credits.
Introduction to the nature of relationships between people and their environments, both natural and built. Examines historical trends that have shaped thinking, understanding, and feelings about how humans and the natural world interact. Explores literary writings on issues of sustainability, environmental justice, ecological literacy, and a sense of place. Prerequisites: WR 115 and RD 115 or MTH 20 or equivalent placement test scores. Audit available.

ENG 237. American Working Class Literature. 4 Credits.
Introduces students to literature by and/or about the working class, primarily from an American perspective. Prerequisite: Placement into WR 121. Recommended: ENG 104, ENG 105 and/or ENG 106. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 238. International Working Class Literature. 4 Credits.
Introduces literature by and/or about the working class, primarily from an international perspective. Prerequisite: Placement into WR 121. Recommended: Completion of ENG 104, 105 or 106. Audit available.

ENG 240. Introduction to Native American Literatures. 4 Credits.
Studies oral and written composition by Native Americans from both before and after contact with Euro-Americans. Provides historical, geographical, political, social, cultural, religious, linguistic, aesthetic, and ethnocentric contexts for understanding the development of Native American literatures studied. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 244. Introduction to Asian-American Literature. 4 Credits.
Studies writings in English by American writers of Chinese, Japanese, Korean, Vietnamese, Filipino, Pacific Islander, and other Asian ancestry. Considers the writings in their historical, cultural, political, and social contexts. Emphasizes development of attitudes, values, and identities. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 246. Transnational Literature. 4 Credits.
Examines the themes of Transnational Literature, such as migration, exile and displacement and revolves around literary responses to various historical and cultural moments of transition or crisis. Explores the relationships between a text, its author, and its national, cultural and/or linguistic boundaries. Prerequisite: Placement into WR 121. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 250. Introduction to Folklore and Mythology. 4 Credits.
Develops a cross-cultural perspective on myths, mythologies and folklore from around the world. Explores different theories of the cultural meanings and functions of myths. Prerequisite: Placement into WR 121. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 253. American Literature to 1865. 4 Credits.
Introduces the literature of the land which is now the United States from before European contact through the mid-nineteenth century. Revolves around written manifestations of the various interests, preoccupations, and experiences of the peoples creating and recreating American culture. Considers various literary forms, such as the serialized tale, verse and unpublished (the jeremiad, Native American oratory, the slave narrative, diary). Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 254. American Literature from 1865. 4 Credits.
Introduces students to the literature of the land which is now the United States from the mid-nineteenth century to the present. The course revolves around written manifestations of the various interests, preoccupations, and experiences of the peoples creating and recreating American culture. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 258. African-American Literature. 4 Credits.
Introduces the literatures of the African American people whose roots are in Africa. Investigates African civilization and writers of African descent up to the period of Reconstruction. Explores African and European slave narratives, as well as the African origins of African-American writing and storytelling. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 257. African-American Literature. 4 Credits.
Introduces the literature of Americans whose roots are in Africa. The course explores the period of Reconstruction through Harlem Renaissance. It incorporates novels, short stories, poems, journalism, autobiographies and plays. Focuses on the oral tradition and written texts of African Americans. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 258. African-American Literature. 4 Credits.
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 last five hundred years. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 260. Introduction to Women Writers. 4 Credits.
Explores the writings and literary theory from diverse places and historical periods. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 261. Literature of Science Fiction. 4 Credits.
Explores the roots of science fiction as well as classic and modern works of science fiction and speculative literature. Introduces common themes in science fiction, the various ideological underpinnings of science fiction, and the way such literature comments on current issues in society and presents new ideas to society. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 265. International Political Poetry. 4 Credits.
Develops students' understanding of how poets address issues of class oppression, economic inequality, racism, sexism, war, and peace. Shows how poets function as prophets, precursors, dissidents, and recorders. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 266. Literature of War. 4 Credits.
Introduces a range of international texts and films pertaining to war in order to explore the social, cultural, political, and historical conditions that have led to war as well as the various ways war is remembered and forgotten; and the possibilities for peace. Explores various perspectives, including those of combatants and their families, innocent victims, returning soldiers and veterans, and later generations. Considers the many complex questions about the evolving definitions of war; the morality of war; the roles of propaganda and anti-war movements; the ways in which wars are remembered and forgotten; and the possibilities for peace. Considers memoirs, fiction, poetry, literary nonfiction, graphic novels, documentaries and feature films created by both combatants and civilians. Prerequisite: Placement into WR 121. Audit available.

ENG 269. Wilderness Literature. 4 Credits.
Explores writings about wilderness and the natural world, giving attention to the relationship between nature and culture. Considers a variety of historical perspectives through essays, poetry, book-length nonfiction, novels, and film. Examines efforts to rethink the concept of wilderness with respect to law, gender, work, race, and the built environment (e.g., urban forests, gardens, farming) while addressing contemporary concerns for global environmental sustainability. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ENG 275. The Bible as Literature. 4 Credits.
Explores the Bible as a literary text by discussing authorship, translation, literary forms, history, and cultural context. Discusses the Bible as a point of reference for literature as well as for other works of art. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 298. Independent Study: English. 3 Credits.
Covers special topics, activities, or projects in the area of English not covered in depth in other English courses. Recommended: Previous study in English. Instructor permission required. This course fulfills the following GE requirements: Arts and Letters/AS.

ENGLISH FOR SPEAKERS OF OTHER
ESOL 10. Level 1 Integrated Skills. 0 Credits.
Develops low-beginning English reading, writing, speaking and listening skills for adult learners in their roles as family and community members, workers, citizens and lifelong learners. Promotes the process of combining knowledge, skills, and problem-solving strategies. First course in the eight-level ESOL sequence. Prerequisites: ESOL placement test within the past 12 months OR instructor permission.

ESOL 10A. Level 1 Integrated Skills. 0 Credits.
The first of four levels of English as a second language. Students develop basic English communication. Reading, Writing, speaking and Listening skills are taught in the context of communicating in adult life roles as family and community members, workers, citizens and lifelong learners. A language placement test is required for enrollment.

ESOL 10B. Level 1 Integrated Skills. 0 Credits.
The first of four levels of English as a second language. Students develop basic English communication. Reading, Writing, Speaking and Listening skills are taught in the context of communicating in adult life roles as family and community members, workers, citizens and lifelong learners. A language placement test is required for enrollment.

ESOL 12. ESOL Beginning Reading and Writing. 0 Credits.
Non-native English speaking students develop beginning literacy skills. Reading and writing are taught in the context of communication in adult life roles. Prerequisite: Placement into ESOL 10 or ESOL 20 or instructor permission.

ESOL 15. English in the Workplace. 0 Credits.
Available to participants who are non-native speakers of English enrolled in programs at the Capital Career Center. Instruction focuses on work search related skills and communication in the workplace.

ESOL 20. Level 2 Integrated Skills. 0 Credits.
Continues to develop beginning English reading, writing, speaking and listening skills for adult learners in their roles as family and community members, workers, citizens and lifelong learners. Promotes the process of combining knowledge, skills, and problem-solving strategies. Second course in the eight-level ESOL sequence. Prerequisites: ESOL placement test within the past 12 months OR instructor permission.

ESOL 20A. Level 2 Integrated Skills. 0 Credits.
The second of four levels of English as a second language. Students develop basic English communication. Reading, Writing, Speaking and Listening skills are taught in the context of communicating in adult life roles as family and community members, workers, citizens and lifelong learners. A language placement test is required for enrollment.

ESOL 20B. Level 2 Integrated Skills. 0 Credits.
The second of four levels of English as a second language. Students develop basic English communication. Reading, Writing, Speaking and Listening skills are taught in the context of communicating in adult life roles as family and community members, workers, citizens and lifelong learners. A language placement test is required for enrollment.

ESOL 23. ESOL Language Learning Lab. 0 Credits.
The ESOL Language Lab provides ESOL students with self-paced, individualized learning. The primary focus in the lab is on grammar, vocabulary, reading, writing, listening and speaking skills related to the eight levels of the ESOL program curriculum. Multi-media/computer assisted instruction in addition to textbook and workbook assignments are used. Learning activities may be supplemented with one-on-one or small group tutoring. Prerequisite: Placement in ESOL 10 or higher or instructor permission.

ESOL 30. Level 3 Integrated Skills. 0 Credits.
Develops high-beginning English reading, writing, speaking and listening skills for adult learners in their roles as family and community members, workers, citizens and lifelong learners. Promotes the process of combining knowledge, skills, and problem-solving strategies. Third course in the eight-level ESOL sequence. Prerequisites: ESOL placement test within the past 12 months OR instructor permission.

ESOL 30A. Level 3 Integrated Skills. 0 Credits.
The third of four levels of English as a second language. Students develop low intermediate English communication. Reading, Writing, Speaking and Listening skills are taught in the context of communicating in adult life roles as family and community members, workers, citizens and lifelong learners. A language placement test is required for enrollment.

ESOL 30B. Level 3 Integrated Skills. 0 Credits.
The third of four levels of English as a second language. Students develop low intermediate English communication. Reading, Writing, Speaking and Listening skills are taught in the context of communicating in adult life roles as family and community members, workers, citizens and lifelong learners. A language placement test is required for enrollment.

ESOL 32. ESOL High Beginning Reading and Writing. 0 Credits.
Non-native English speaking students develop high beginning literacy skills. Reading and writing are taught in the context of communicating in adult life roles. Prerequisite: Placement in ESOL 30 or instructor permission.

ESOL 33. EL Civics. 0 Credits.
Adult English language learners receive civics education in US citizenship, US history and culture, and also how to become active participants in their new communities. Reading, writing, speaking and listening skills are taught in the context of communicating in the adult life roles of community member and citizen. Instruction includes a variety of methods based on students’ individual skill levels, needs and learning styles. Concepts and skills taught in the EL Civics classes help students gain citizenship. Prerequisites: Placement in ESOL 30.

ESOL 40. Level 4 Reading. 4 Credits.
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, inferencing, using context clues, reviewing prereading techniques, study of word forms, common affixes, synonyms, and antonyms. Readings from textbooks and literature taught in the context of adult life roles. Prerequisites: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 42/42N and ESOL 44/44N or higher. Audit available.

ESOL 40N. Level 4 Reading. 0 Credits.
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, inferencing, using context clues, reviewing prereading techniques, study of word forms, common affixes, synonyms, and antonyms. Readings from textbooks and literature taught in the context of adult life roles. Prerequisites: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 42/42N and ESOL 44/44N or higher.

ESOL 42. Level 4 Writing. 4 Credits.
The fourth level of ESOL and the first of a five-course sequence that focuses on writing. Includes introduction to the writing process; descriptive and narrative paragraphs and formal letters; review of basic grammar; introduction to present perfect and past continuous; writing and grammar 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 44/44N or higher. Audit available.

ESOL 42N. Level 4 Writing. 0 Credits.
The fourth level of ESOL and the first of a five-course sequence that focuses on writing. Includes introduction to the writing process; descriptive and narrative paragraphs and formal letters; review of basic grammar; introduction to present perfect and past continuous; writing and grammar 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 44/44N or higher. Audit available.

ESOL 44. Level 4 Communication. 4 Credits.
The fourth level of ESOL and the first of a five-course sequence that focuses on communication. Identification and production of English stress and intonation; certain vowels and consonants; reductions. Listening comprehension for main idea and important details, grammatical structures, questions, and key vocabulary words. Discussion skills. Speaking using important language functions including asking for clarification, agreeing, and negotiating meaning. Short, prepared presentation. Communication taught in the context of communicating in adult life roles. Prerequisites: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 40/40N and ESOL 42/42N or higher. Audit available.
ESOL 44N. Level 4 Communication. 0 Credits.
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 42/42N and ESOL 44/44N or higher.

ESOL 59. ESOL VESL Support Course. 8 Credits.
Provides English language support for ESOL learners while they are concurrently enrolled in designated CTE courses. Runs 80 hours per term concurrently. Department permission required. Prerequisite: Placement into ESOL Level 5 or 6 in all three skill levels or receive instructor permission, and be concurrently enrolled in an associated academic program.

ESOL 59A. ESOL VESL Support Course. 8 Credits.
Provides English language support for ESOL learners while they are concurrently enrolled in the program’s designated initial term CTE courses. Runs 80 hours per term concurrently with the CTE courses. Prerequisite: Placement into ESOL Level 5 or 6 in all three skill levels or receive instructor permission, and be concurrently enrolled in an associated academic program.

ESOL 59B. ESOL VESL Support Course II. 8 Credits.
Provides English language support for ESOL learners while they are concurrently enrolled in the program’s designated second term CTE courses. Runs 80 hours per term concurrently with the CTE courses. Prerequisite: Placement into ESOL Level 5 or 6 in all three skill levels or receive instructor permission.

ESOL 59C. ESOL VESL Support Course III. 8 Credits.
Provides English language support for ESOL learners while they are concurrently enrolled in the program’s designated third term CTE courses. Runs 80 hours per term concurrently with the CTE courses. Prerequisite: Placement into ESOL Level 5 or 6 in all three skill levels or receive instructor permission.

ESOL 59D. ESOL VESL Support Course IV. 8 Credits.
Provides English language support for ESOL learners while they are concurrently enrolled in the program’s designated fourth term CTE courses. Runs 80 hours per term concurrently with the CTE courses. Prerequisite: Placement into ESOL Level 5 or 6 in all three skill levels or receive instructor permission.

ESOL 59N. ESOL VESL Support Course. 0 Credits.
Provides language support for ESOL learners while they are concurrently enrolled in the CTE courses. Runs 80 hours per term concurrently with an associated credit academic program. Prerequisite: Placement into ESOL Level 5 or 6 in all three skill levels or receive instructor permission, and be concurrently enrolled in an associated academic program.

ESOL 140. American Culture and Communication 1. 3 Credits.
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. Audit available.

ESOL 150. Level 5 Reading. 4 Credits.
The fifth level of ESOL and the second of a five-course sequence that focuses on reading. Content comprehension, textual analysis, critical thinking skills, study skills, and language analysis. Using the dictionary, finding main ideas, summarizing, inferencing, using context clues, reviewing prereading techniques, study of word forms, common affixes, synonyms, and antonyms. Readings from textbooks and literature taught in the context of 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. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 150N. Level 5 Reading. 0 Credits.
The fifth level of ESOL and the second of a five-course sequence that focuses on reading. Content comprehension, textual analysis, critical thinking skills, study skills, and language analysis. Using the dictionary, finding main ideas, summarizing, inferencing, using context clues, reviewing prereading techniques. Study of word forms, common affixes, synonyms, and antonyms. Readings from textbooks and literature taught in the context of 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 Credits.
The fifth level of ESOL and the second of a five-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. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 152N. Level 5 Writing. 0 Credits.
The fifth level of ESOL and the second of a five-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 1. 2 Credits.
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 40/40N and ESOL 42/42N and ESOL 44/44N or higher. Audit available.

ESOL 153N. Grammar 1. 0 Credits.
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 40/40N and ESOL 42/42N and ESOL 44/44N or higher.

ESOL 154. Level 5 Communication. 4 Credits.
The fifth level of ESOL and the second of a five-course sequence that focuses on communication. Identification and production of English consonants and vowels; common sound substitutions; stress and intonation. Listening comprehension and discussion skills. Public speaking, including at least one prepared speech and written outline on an academic topic. Communication taught in the context of communicating in academic and adult life roles. Prerequisite: ESOL placement test OR successful completion of ESOL 44/44N; AND concurrent placement in ESOL 40/40N and ESOL 42/42N or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 154N. Level 5 Communication. 0 Credits.
The fifth level of ESOL and the second of a five-course sequence that focuses on communication. Identification and production of English consonants and vowels; common sound substitutions; stress and intonation. Listening comprehension and discussion skills. Public speaking, including at least one prepared speech and written outline on an academic topic. Communication taught in the context of communicating in academic and adult life roles. Prerequisite: ESOL placement test OR successful completion of ESOL 44/44N; AND concurrent placement in ESOL 40/40N and ESOL 42/42N or higher.

ESOL 160. Level 6 Academic Reading. 5 Credits.
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. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.
ESOL 162. Level 6 Academic Writing. 5 Credits.
Review of the writing process and development of the essay. Covers descriptive, narrative, process, and comparison/contrast essays. Review of verb tenses, sentence types, punctuation, and spelling patterns. Introduction to adverb and adjective clauses, reported speech, passive voice, and gerunds and infinitives. Prerequisite: ESOL placement test OR successful completion of ESOL 152/152N; AND concurrent placement in ESOL 150/150N and ESOL 154/154N or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 163. Grammar 2. 2 Credits.
Provides the opportunity for identification and practice of the following grammatical structures: subject-verb agreement, verb tenses, passive voice, gerunds and infinitives. Prerequisite: ESOL placement test OR successful completion of ESOL 152/152N; AND concurrent placement in ESOL 150/150N and ESOL 154/154N or higher. Audit available.

ESOL 164. Level 6 Academic Communication. 5 Credits.
Presents oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior with new knowledge to address the purpose. Covers listening comprehension, note-taking, and discussion of academic topics at the high intermediate level. Includes public speaking, such as prepared speeches on academic topics with written outlines and use of outside sources. Reviews English consonants and vowels, word endings, intonation, phrasing, linking, reductions and stress patterns. Prerequisites: Placement in ESOL 160, ESOL 162, and ESOL 164 or higher; or successful completion of ESOL 150, ESOL 152 and ESOL 154. Audit available.

ESOL 230. Advanced English Skills Review. 2 Credits.
Reviews advanced academic listening, reading, writing, and speaking skills. Develops strategies for taking time-sensitive tests, including the TOEFL. Prerequisites: Placement into ESOL 254 AND ESOL 250 AND ESOL 252 or higher OR successful completion of ESOL 164 AND ESOL 160 AND ESOL 162. Audit available.

ESOL 240. American Culture and Communication 2. 3 Credits.
Continued illustration of American cultural themes and values. Instruction through reading, discussion, journal-writing, film and speeches. Overview and application of academic study skills. May include a service learning component. Does not replace courses in the core curriculum. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher. Audit available.

ESOL 250. Level 7 Academic Reading. 5 Credits.
Continues from ESOL 240. Focuses on reading materials such as textbooks, novels, short stories and articles. Includes finding themes and main ideas, summarizing, paraphrasing, making inferences, using context clues, and reviewing prereading techniques. Continues the study of word forms, common affixes and stems, and figurative language. Incorporates content comprehension, textual analysis, critical thinking, study skills and language analysis. This is the fifth course of a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 250 within the past 12 months AND concurrent enrollment in ESOL 252 and ESOL 254 or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 251. Advanced Supplementary Writing. 3 Credits.
Emphasizes the refinement and development of conscious control of English sentence and paragraph structures as well as the correction of persistent errors in writing. ESOL 253 provides a bridge course between ESOL 252 and ESOL 262 or between ESOL 262 and WR 115. Audit available.

ESOL 252. Level 7 Academic Writing. 5 Credits.
Develops advanced writing skills. Reviews the writing process with descriptive and expository essays and improves skills with grammar and mechanics. Explores concepts including but not limited to the cultural expectations related to a U.S. academic environment and the use of outside readings to support one’s ideas and opinions in writing. This is the fourth course of a five-course sequence. Prerequisite: ESOL placement test OR successful completion of ESOL 162 within the past 12 months AND concurrent enrollment in ESOL 160 and ESOL 164 or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/AGS.

ESOL 253. Grammar 3. 2 Credits.
Reviews certain grammatical structures commonly used in advanced academic writing and speaking. Introduces new contextualized grammatical structures. Reinforces grammatical concepts in both oral and written academic contexts. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher OR successful completion of ESOL 160 and ESOL 162 and ESOL 164. Audit available.

ESOL 254. Level 7 Academic Communication. 5 Credits.
Presents oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior with new knowledge to address the purpose. Reviews listening comprehension, note-taking, and discussion of academic topics at the advanced level. Includes public speaking, such as prepared speeches and presentations. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher OR successful completion of ESOL 160 and ESOL 162 or ESOL 164. Audit available.

ESOL 260. Level 8 Academic Reading. 5 Credits.
Develops upper-advanced English reading skills. Focuses on reading materials such as textbooks, novels, short stories and articles. Includes finding themes and main ideas, summarizing, paraphrasing, making inferences, evaluating sources and analyzing arguments. Incorporates content comprehension, textual analysis, critical thinking, study skills and language analysis. This is the fifth course of a five-course sequence. Prerequisite: Placement test OR successful completion of ESOL 250 within the past 12 months AND concurrent enrollment in ESOL 252 and ESOL 254 or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ESOL 262. Level 8 Academic Writing. 5 Credits.
Develops upper-advanced writing skills. Includes grammar and mechanics, and builds upon expository essay styles by introducing outside research. Explores concepts including but not limited to the cultural expectations related to a U.S. academic environment with an increased emphasis on basic research conventions. This is the fifth course of a five-course sequence. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher OR successful completion of ESOL 252 within the past 12 months AND concurrent enrollment in ESOL 250 and ESOL 252 or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ESOL 264. Level 8 Academic Communication. 5 Credits.
Presents oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior with new knowledge to address the purpose. Covers listening comprehension, note-taking, and discussion of academic topics at the high advanced level. Includes public speaking, such as persuasive speeches on academic topics with written outlines and use of outside sources. Reviews English consonants and vowels, word endings, intonation, phrasing, linking, reductions and stress patterns. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher OR successful completion of ESOL 254; AND concurrent placement in ESOL 250 and ESOL 252 or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ESOL 265. Level 8 Academic Communication. 3 Credits.
Presents oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior with new knowledge to address the purpose. Covers listening comprehension, note-taking, and discussion of academic topics at the high advanced level. Includes public speaking, such as persuasive speeches on academic topics with written outlines and use of outside sources. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher OR successful completion of ESOL 254; AND concurrent placement in ESOL 250 and ESOL 252 or higher. Audit available.

ESOL 267. Level 8 Pronunciation. 2 Credits.
Presents the development of pronunciation competence as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior with new knowledge to address the purpose. Reviews English consonants and vowels, word endings, intonation, phrasing, linking, reductions and stress patterns. Prerequisites: Placement in ESOL 250 and ESOL 252 and ESOL 254 or higher OR successful completion of ESOL 250; AND concurrent placement in ESOL 250 and ESOL 252 or higher. Audit available.
ENVIRONMENTAL STUDIES

ESR 140. Introduction to Environmental Sustainability. 4 Credits.
Introduces concepts of environmental sustainability and their applications. May include field trips. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 141. Introduction to Individual Sustainability. 4 Credits.
Introduces the concept of sustainability at the individual scale. Develops an individual sustainability model by reviewing current models of sustainability used by businesses, communities, and governments. Addresses a wide range of topics at the individual level, including the built world, water and energy, transportation options, wise purchasing, sustainable agriculture and food choices, recycling and waste reduction, recreation and its effect on the environment; restoring natural environments; health and how it impacts the environment. Covers the core principles of sustainability (Ecology/environment, economy/employment, equity/equality, education). Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 150. Environmental Studies Orientation. 1 Credit.
Serves to orient students to environmental information available through campus library and computer resources. Uses assignments aimed at gathering and summarizing information on academic preparation of environmental professionals. Audit available.

ESR 160. Intro to Environmental Systems. 4 Credits.
Introduces the structure and function of terrestrial, aquatic and atmospheric systems, including the human actions that affect them. Includes lab sections that introduce basic quantitative techniques for collecting and analyzing data from environmental systems. Prerequisite: ESR 150 (may be taken concurrently). Audit available.

ESR 171. Environmental Science: Biological Perspectives. 4 Credits.
Develops an understanding of environmental topics that are primarily biological in nature. Includes human population issues, matter and energy resources, ecosystems, environmental ethics, and food and land resources. The associated laboratories will illustrate these topics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAND, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AASOT-B.

ESR 172. Environmental Science: Chemical Perspectives. 4 Credits.
Develops an understanding of environmental topics that are primarily chemical in nature. Includes air pollution, global warming, toxicology, risk assessment, water pollution, and hazardous waste. The associated laboratories will illustrate these topics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAND, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AASOT-B.

ESR 173. Environmental Science: Geophysical Perspectives. 4 Credits.
Develop an understanding of environmental topics that are primarily geophysical in nature. Includes quantitative basics, soil resources, hydrogeology, nonrenewable mineral and energy resources, perpetual energy resources, and solid waste. The associated laboratories will illustrate these topics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAND, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AASOT-B.

ESR 201. Applied Environmental Studies: Science/Policy Consideration. 4 Credits.
Introduces environmental laws and the regulations promulgated under them. Includes examinations of the genesis of these laws (e.g., NEPAA, Clean Air and Water Acts, EUPRA, Endangered Species Act) and their history of compliance and violation. Prerequisite: ESR 160. Audit available.

ESR 202. Applied Environmental Studies: Prep for Problem Solving. 4 Credits.
Includes environmental sampling, sampling design, and measurement in relation to the field experience. Prerequisite: ESR 160. Audit available.

ESR 203. Applied Environmental Studies: Project. 4 Credits.
Uses project work involving work with an environmental agency, industry, service or research organization. Prerequisite: ESR 202. Audit available.

ESR 204. Introduction to Environmental Restoration. 4 Credits.
Develops an understanding of the techniques and practices of environmental restoration using hands-on practice in the field. Includes riparian restoration and restoration in wetlands and upland ecosystems topics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and ESR 160 or BI 143. Audit available.

ESR 298. Special Topics: Environmental Science. 1-4 Credits.
Covers special topics, activities or projects in an area of environmental science not usually covered in depth in other environmental science courses. Audit available.

FACILITIES MAINTENANCE TECH

FMT 100. Introduction to Facilities Maintenance Systems. 2 Credits.
Overview of industrial maintenance. OSHA approved industrial safety procedures are practiced. Includes use of basic tools and specialized equipment; lubrication, maintenance and repair motors, drive belts, pulley, and sheaves. Examines the inter-dependency of related systems. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

FMT 101. Refrigeration I. 2 Credits.
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. Audit available.

FMT 102. Refrigeration II. 2 Credits.
Covers 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. Audit available.

FMT 103. Refrigeration III. 2 Credits.
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. Audit available.

FMT 111. Refrigeration Electrical I. 2 Credits.
Basic theory and applications of electrical concepts including Ohm’s Law, electric power, and concepts of electric circuits are emphasized. Alternating current, power distribution and installation of HVAC systems using wiring diagrams and schematics are included. Prerequisites: Placement in MTH 20 or higher; (WR 80 or ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

FMT 112. Refrigeration Electrical II. 2 Credits.
Theory and application of electrical motor concepts and electrical circuits are emphasized. Control system components, wiring diagrams and schematics are included. Prerequisites: FMT 111 or TE 9237 Audit available.

FMT 113. Refrigeration Electrical III. 2 Credits.
Schematic development and use in diagnosis, service, and repair of HVAC systems; control applications and circuit evaluation. Prerequisites: FMT 112 or TE 9238 Audit available.

FMT 119. Water Treatment and Distribution. 3 Credits.
Covers the basics of cooling, tower, boiler, waste water, and water purification systems. Topics include corrosion, scale, fouling and bacteria related issues. Mechanical equipment pertaining to water treatment is included. Audit available.

FMT 122. Introduction to Boilers. 3 Credits.
Fundamentals of hydronics systems, heat loss calculations, physical properties of water, types of boilers, piping systems and components for correct fluid flow including circulating pumps. Includes practical maintenance and component identification. Audit available.

FMT 125. Natural Gas Equipment I. 2 Credits.
Covers natural gas and its properties, pressures, piping and the mechanical code requirements for natural gas installation. Utilizing basic knowledge gained in this course, students can apply this knowledge to basic diagnosis procedures. Audit available.

FMT 128. Oil Furnace Service. 2 Credits.
Covers oil burner service and installation procedures, fuel oil principles, motors, fan couplings, nozzles, transformers burner construction, pumps, controls and troubleshooting procedures. Audit available.

FMT 131. Lock Service and Repair. 4 Credits.
Covers the operation of lock systems, troubleshooting, key cutting, key ordering and key control. Audit available.

FACILITIES MAINTENANCE TECH
FMT 170. Solar Photovoltaic Panel Installation. 3 Credits.
Covers types, components, and installation of Solar Photovoltaic modular arrays. Focuses on site assessment, structural stability, mounting options, overall design, and efficiency. Emphasizes residential design and installation. Follows National Electrical Code, state and city building code requirements. Prerequisites: APR 101 or APR 121 or FMT 111 or department permission. Audit available.

FMT 201. Introduction to Chiller Systems. 3 Credits.
Chilled water and its application in the industrial/ institutional setting. Covers chiller compressors, refrigerants, air cooled and water cooled condensers, controls and piping. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 202. Direct Digital Control Advanced Technology. 3 Credits.
Covers the spectrum of advanced HVAC control applications for commercial building systems. Topics range from the single zone air handler to multi-zone and VAV systems, valve configurations, engineering calculations and how this equipment interfaces to Life Safety systems. Prerequisite: FMT 113. Audit available.

FMT 204. Heat Pumps. 3 Credits.
Focuses on operation and service requirements of heat pumps. Demonstrates the application and understanding of the test equipment required to service the heat pumps. Includes the function of the control system required for operation of the heat pump system. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 207. Pneumatic Controls. 2 Credits.
Provides HVAC service technician with the proper methods of diagnosing malfunctions in Honeywell control systems. Also covers thermostat/controllers of Robert Shaw, Johnson, Honeywell, and Barber Coleman. Includes elements of pneumatic systems, valve assemblies, dampers, controllers, thermostats, sensors, relays and air supply equipment. Audit available.

FMT 210. Basic HVAC Installation & Techniques. 2 Credits.
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) Audit available.

FMT 213. Commercial Refrigeration Shop. 2 Credits.
Troubleshooting, maintenance, and repair of typical commercial refrigeration equipment found in convenience stores, markets, restaurants, and related applications. Prerequisites: (FMT 112 or TE 9238); (FMT 102 or APR 132 or TE 9243) Audit available.

FMT 216. Commercial Systems Design. 3 Credits.
Covers refrigeration loads, equipment selection, piping and installation procedures. Focuses on calculating loads for walk-in units, sizing condensing units, and evaporative coils. Includes use of catalogs to locate and properly select components, for design and troubleshooting new and existing applications. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 219. Residential Systems Roofing. 3 Credits.
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 for design and troubleshooting new and existing applications. Prerequisites: FMT 103 or APR 133 or TE 9244. Audit available.

FMT 222. Intermediate Boilers. 3 Credits.
Fundamentals of hydronic 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. Audit available.

FMT 265. Building Commissioning I. 3 Credits.
Covers the efficient operation of building systems to ensure that building systems 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. Audit available.

FMT 280A. Cooperative Work Experience. 1-8 Credit.
Provides “hands-on” work experience for students enrolled in Facilities Maintenance Technology. Department permission required. Audit available.

FIRE PROTECTION

FP 101. Principles of Emergency Services. 3 Credits.
Introduces the Emergency Services. Explores career opportunities and requirements for emergency service responders. Related topics will be introduced, such as nomenclature, history, basic chemistry and physics of emergency situations, life safety initiatives, laws and loss analysis. Introduces fire protection systems, specific fire protection functions, organization and function of public and private emergency services. This course is the prerequisite for FP 111. Audit available.

FP 111. Fire Academy Part 1. 10 Credits.
Covers basic tools, procedures and safety precautions utilized by firefighters, during fire ground operations. Includes comprehensive training in individual firefighting skills. Involves transfer of knowledge obtained from classroom instruction to drill ground application, during hands-on training. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and FP 101.

FP 112. Fire Academy Part 2. 7 Credits.
Covers tools, procedures and safety precautions utilized by firefighters, during fire ground operations. Includes comprehensive training in firefighting skills related to fire company evolutions. Involves transfer of knowledge obtained from classroom instruction to drill ground application, during hands-on live fire training. Prerequisite: FP 111.

FP 121. Fire Behavior and Combustion. 3 Credits.
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 Credits.
Provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention division; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation. Prerequisites: WR 121, MTH 65 and FP 112.

FP 123. Hazardous Materials Awareness and Operations. 3 Credits.
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 130. Fire Protection Hydraulics and Water Supply. 3 Credits.
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. Prerequisites: MTH 95, FP 112 or equivalent.

FP 133. Wildland Firefighter. 3 Credits.
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 firefighter safety and survival, and receive an introduction to the incident command system.

FP 137. Fire Protection Systems. 3 Credits.
Covers features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection, and portable fire extinguishers. Prerequisites: FP 112, MTH 60, WR 115, and RD 90 or equivalent placement test scores.

FP 161. Vehicle Extrication Basics. 0.5 Credits.
Covers procedures utilized for the extrication of injured victims from motor vehicles. Includes, tools, equipment and hazards associated with vehicle extrication and safety considerations for rescue operations.

FP 166. Building Construction for Fire Protection. 3 Credits.
Covers the components of building construction related to firefighter and life safety. Includes the classifications of building construction and the theoretical concepts of how fire impacts major types of building construction. Prerequisites: FP 112, MTH 60, WR 115, and RD 90 or equivalent placement test scores.

FP 170. Introduction to Firefighting Tactics and Strategy. 3 Credits.
Explores tactics and strategies used on emergency incidents. Includes incident action plan, size-up, exposures protection, rescue, containment, extinguishment, control, incident command system, mutual aid operations, post-incident analysis, and prefire surveys. Prerequisite: Placement into WR 121 and MTH 65, and FP 112.
FP 200. Fire Apparatus Driver/Operator I. 3 Credits.
Covers practical procedures, techniques and safety precautions used while operating fire apparatus. Includes fire apparatus inspection and preventative maintenance, driving laws and policies, specific to the apparatus operator maneuver a vehicle, and apparatus positioning. Prerequisite: FP 112. Corequisite: FP 232.

FP 201. Introduction to Emergency Service Rescue. 4 Credits.
Introduces technical rescue knowledge and skills as defined in NFPA 1006, including, job performance requirements, rope rescue, confined space rescue, structural collapse, vehicle and machinery rescue, surface water rescue, swiftwater rescue, dive rescue, surf rescue, and wilderness rescue. Prerequisite: FP 112 or Fire Fighter II certification.

FP 207. Fire Service Based Emergency Medical Service. 3 Credits.

FP 210. Multicultural Strategies for Firefighters. 3 Credits.
Provides familiarization with communication styles, customs, language and behavior patterns of various cultures, ethnic groups and non-traditional populations as employed by and encountered by the fire service and other emergency service professions. Audit available.

FP 212. Fire Investigation (Cause Determination). 3 Credits.
Examines the burning characteristics of combustibles and how materials are ignited. Interprets clues and burn patterns leading to the point of origin. Identifies incendiary indicators and sources of ignition. Covers preliminary interview procedures and how to preserve fire scene evidence. Prerequisite: WR 121, MTH 65, and FP 112.

FP 214. Occupational Safety & Health for the Fire Science. 3 Credits.
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 Credits.
Explores tactical and strategic decisions that structural firefighters and wild land firefighters will be making when confronting wild land fires that threaten life, property, and improvements in the wild land/urban interface. This course is equivalent to National Wildfire Coordination Groups S-215 course. Prerequisite: FP 112, FP 133, MTH 60 and placement into WR 121.

FP 225. Fire Department Customer Service. 3 Credits.
Explores personal and practical skills needed to enhance customer service in the fire service with an emphasis on techniques used in emergency service operations. Covers the importance and the aspects of service delivery and basic human relations involved in fire department customer service. Prerequisite: FP 112, FP 122, WR 121 and MTH 65.

FP 232. Fire Apparatus Driver/Operator II. 2 Credits.
Covers practical procedures, techniques, and safety precautions used during apparatus operations. Includes the history and development of fire apparatus capabilities, pump construction, procedures for operation and hydraulic formulas used to calculate flow requirements. Knowledge and skills acquired during classroom instruction will be applied in drill ground operations. Prerequisite: FP 200.

FP 240. Emergency Services Instructor I. 3 Credits.
Designed to meet NFPA Standard 1041, Fire and Emergency Services Instructor I. Presents how to organize classroom, laboratory and outdoor learning environments and present prepared lessons utilizing recognized methods of instruction. Includes strategies to adjust and modify presentations based on student learning styles and changing classroom environments. Covers how to write course objectives and student learning outcomes. Prerequisites: WR 121, MTH 65 and COMM 111.

FP 242. Hazardous Materials Chemistry. 3 Credits.
Covers basic chemistry relating to hazardous materials categories. Includes key recognition, identification, reactivity, and health hazards encountered by emergency services. Prerequisites: FP 112, MTH 60, FP 122, WR 121 and MTH 65.

FP 250. Emergency Services Instructor II. 3 Credits.
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 270. Fire Officer I. 4 Credits.
Includes first level supervisory functions associated with human resource management, community and government relations, fire administration, inspection and investigation, emergency service delivery, and health and safety. Meets NFPA 1021. Prerequisites: FP 112 or Fire Fighter II certification. Audit available.

FP 271. Fire Officer II. 4 Credits.
Includes second level supervisory functions associated with human resource management, community and government relations, fire administration, inspection and investigation, emergency service delivery, and health and safety. Meets NFPA 1021, Chapter 5, Fire Officer II. Prerequisite: FP 270 or equivalent.

FP 273. Fire Service Human Resource Management. 3 Credits.
Covers NFPA 1021, Chapters 4.2 and 5.2 and will involve human resources to accomplish assignments in accordance with safety plans and in an efficient manner. Involves evaluating personnel performance and supervising personnel during emergency and non-emergency work periods. Prerequisites: WR 121, MTH 65, FP 112.

FP 274. Introduction to Fire and Emergency Administration. 3 Credits.
Introduces the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasizes fire and emergency service, ethics, and leadership from the perspective of the company officer. Includes preparing a project or divisional budget, news releases, and policy changes, according to job performance requirements. This course meets the intention of NFPA 1021, Fire Officer I I I, Chapters 4.4 and 5.4. Prerequisites: WR 121, MTH 65, FP 112 or department permission.

FP 275. Community and Government Relations. 3 Credits.
Explores responding to inquiries of the community and allied organizations in the community. Covers communicating and projecting the role, image and mission of the department to the public and organizations for the purpose of establishing strategic partnerships and delivering safety, injury and fire prevention education programs. This course meets the intention of NFPA 1021, Fire Officer I I I, Chapters 4.3 and 5.3. Prerequisites: Placement into WR 121 and MTH 65 or equivalent placement test scores, and FP 122 or department permission.

FP 280A. Cooperative Education: Fire Science. 3 Credits.
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 Credits.
Department permission required.

FP 289. Emergency Service Lifetime Fitness and Conditioning. 3 Credits.
Covers all aspects of fitness for current and prospective firefighters. Includes physical and mental aspects of performance for optimal achievement on fire department agility tests and firefighting tasks; individual conditioning strategies, nutritional guidelines, protective clothing concepts, basic exercise principles, pre-employment, evaluation, and lifelong fitness and conditioning. Prerequisites: WR 121, MTH 65.

FP 291. Fire Codes and Related Ordinances. 3 Credits.
Covers aspects of the International Fire Code (IFC), State laws, regulations, revised statutes and local ordinances related to fire & life safety. Includes interpretation of the IFC, code development and the adoption process; code enforcement authority and limitations; application of codes, documentation and interrelationships of codes and standards, recommended practices and ethical and political issues. Designed to meet NFPA Standard 1031, Standard for Professional qualifications, for Fire Inspector I. Prerequisites: WR 121, MTH 65, FP 122, FP 137 and FP 166. Audit available.

FP 295. Major Emergency Tactics/Strategy. 3 Credits.
Covers response and size-up, fire-ground tactics and analysis, post-mortem, pre-fire survey and planning, combined operations, mutual aid, disaster planning and problems in unusual fire operations. Prerequisite: FP 170. Audit available.
FT 102. Injury Prevention & Management. 3 Credits.
Covers information and knowledge concerning prevention and rehabilitation of athletics/sports/fitness injuries. Emphasis on preventing injuries by reducing risks for injury or illness, creating safe environments, ensuring proper fit and use of sporting equipment, and implementing emergency action plans. Students who satisfactorily complete the requirements will be eligible for first responder certifications (i.e. CPR, first aid, etc.). Audit available.

FT 103. Nutrition for Fitness Instructors. 3 Credits.
Explores basic principles of nutrition with an emphasis on application to fitness, weight management and athletic performance. Prerequisites: WR 121; MTH 65; HE 295 and PE 295 (or HPE 295). Audit available.

FT 104. Fitness Assessment & Programming I. 3 Credits.
Introduces fitness testing for apparently healthy populations. Covers cardiovascular fitness, muscular strength and endurance, flexibility/balance, body composition in both individual and group assessments. Prerequisites: FT 131; HE 295 and PE 295 (or HPE 295). Audit available.

FT 105. Fitness Assessment & Programming II. 3 Credits.
Introduces individual and group exercise plan development and progression for cardiorespiratory, muscular strength/endurance, flexibility/balance, body composition and fitness/balance, body composition and fitness/sport performance. Prerequisites: FT 104. Audit available.

FT 106. Analysis of Movement. 3 Credits.
Examines human motion in physical activity and sport and the integration of anatomy and biomechanics. Explores the anatomical movements involved in a wide variety of motor and balance tasks, postural stability exercises, and overall exercise program design. Prerequisite: FT 131. Audit available.

FT 107. Exercise Science I. 3 Credits.
Investigates physiological mechanisms responsible for adaptations to acute and chronic exercise in the metabolic, endocrine, pulmonary, cardiovascular, and neuromuscular systems. Prerequisite: FT 131. Audit available.

FT 131. Structure & Function of the Human Body. 4 Credits.
Presents basic principles in anatomy, physiology, and exercise science. Introduces terminology, concepts, basic chemistry, cell structure and function, tissues and the following systems: metabolic, cardiovascular, pulmonary, skeletal, muscular, endocrine, and nervous. Interpret and apply the fundamental concepts of human anatomy and physiology. Prerequisite: MTH 65, WR 121, and current Fitness Technology student or instructor approval. Audit available.

FT 180. Fitness Technology Internship Preparation. 1 Credit.
Develops essential skills for successful internship site procurement. Focuses on company research, interviewing techniques, and resume and cover letter generation. Prerequisite: FT 101. Audit available.

FT 201. Fitness Assessment and Program III. 3 Credits.
Explores the needs and abilities of individuals outside of ACSM’s guidelines for apparently healthy populations. Emphasis is on modification of movement, exercise, equipment, and assessments for these individuals/groups. Includes advanced testing procedures, modification of assessments, and modified exercise programming for these individuals/groups. Prerequisite: FT 105. Audit available.

FT 202. Fitness and Aging. 3 Credits.
Explores physiological aspects of aging as applied to fitness and exercise. Prerequisites: FT 131, HE 295 and PE 295 (or HPE 295); or instructor approval. Audit available.

FT 203. Fitness Promotion. 3 Credits.
Covers skills that promote healthy and fit lifestyles to both individuals and groups in a variety of fitness disciplines. Introduces skills to promote success in the job market. Prerequisite: FT 280 or instructor approval. Audit available.

FT 204. Exercise Science II. 3 Credits.
Continues application of physiological concepts from Exercise Science I. Introduces concepts of environmental conditions, advanced training adaptations, and clinical exercise physiology. Includes additional time in the lab setting learning metabolic and ECG stress testing. Prerequisite: FT 104 and FT 107, or instructor approval. Audit available.

FT 280. Cooperative Education: Fitness Technology. 3-10 Credit.
Provides required internship experiences for Fitness Technology majors. Prerequisite: FT 180. Requires third term standing, current First Aid and CPR/AED certifications, and instructor permission. Audit available.

FOODS AND NUTRITION

FN 110. Personal Nutrition. 3 Credits.
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. Basic nutrition course for students with little or no science background. Audit available.

FN 225. Nutrition. 4 Credits.
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. Audit available.

FRENCH

FR 101. First Year French. 4 Credits.
Emphasizes active communication in beginning French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

FR 102. First Year French. 4 Credits.
Continues the work of FR 101. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of FR 101 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

FR 103. First Year French. 4 Credits.
Continues the work of FR 102. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of FR 102 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

FR 111A. First Year French Conversation. 3 Credits.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 111B. First Year French Conversation. 2 Credits.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 111C. First Year French Conversation. 1 Credit.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 101 or 150 or instructor permission. Audit available.

FR 112A. First Year French Conversation. 3 Credits.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 112B. First Year French Conversation. 2 Credits.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 112C. First Year French Conversation. 1 Credit.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 102 or 151 or instructor permission. Audit available.

FR 113A. First Year French Conversation. 3 Credits.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 103 or 151 or instructor permission. Audit available.

FR 113B. First Year French Conversation. 2 Credits.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 103 or 151 or instructor permission. Audit available.

FR 113C. First Year French Conversation. 1 Credit.
Practice of structures and vocabulary of first year French in a conversational format. Recommended: Completion of or simultaneous enrollment in FR 103 or 151 or instructor permission. Audit available.

FR 150. First Year French. 6 Credits.
Emphasizes active communication in beginning French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of FR 150-151 is equivalent to FR 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.
FR 151. First Year French. 6 Credits.
Continues the work of FR 150. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of FR 150 or instructor permission. Completion of FR 150-151 is equivalent to FR 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

FR 201. Second Year French. 4 Credits.
Continues the work of first year French, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year French at college level or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

FR 202. Second Year French. 4 Credits.
Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of FR 201 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

FR 203. Second Year French. 4 Credits.
Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of FR 202 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

FR 211A. Intermediate French Conversation. 3 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 201, 250, or instructor permission. Audit available.

FR 211B. Intermediate French Conversation. 2 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 201, 250, or instructor permission. Audit available.

FR 211C. Intermediate French Conversation. 1 Credit.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 201, 250, or instructor permission. Audit available.

FR 212A. Intermediate French Conversation. 3 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 202, 250, or instructor permission. Audit available.

FR 212B. Intermediate French Conversation. 2 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 202, 251, or instructor permission. Audit available.

FR 212C. Intermediate French Conversation. 1 Credit.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 202, 251, or instructor permission. Audit available.

FR 213A. Intermediate French Conversation. 3 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 203, 251, or instructor permission. Audit available.

FR 213B. Intermediate French Conversation. 2 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 203, 251, or instructor permission. Audit available.

FR 213C. Intermediate French Conversation. 1 Credit.
Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in FR 203, 251, or instructor permission. Audit available.

FR 250. Second Year French. 6 Credits.
Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year French at college level or instructor permission. Completion of FR 250-251 is equivalent to FR 201-202-203. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

FR 251. Second Year French. 5 Credits.
Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of FR 250 or instructor permission. Completion of FR 250-251 is equivalent to FR 201-202-203. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

FR 255. Accelerated French. 8 Credits.
For beginners. Covers the material of FR 101 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 low; the successful student will be able to handle a limited number of interactive social situations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 256. Accelerated French. 8 Credits.
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 FR 256 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 260A. French Culture. 3 Credits.
Studies and discusses contemporary thought and life of the French speaking world. Recommended: Completion of one term of second year French at the college level or instructor permission. Audit available.

FR 260B. French Culture. 2 Credits.
Studies and discusses contemporary thought and life of the French speaking world. Recommended: Completion of one term of second year French at the college level or instructor permission. Audit available.

FR 260C. French Culture. 1 Credit.
Study and discussion of contemporary thought and life of the French speaking world. Recommended: Completion of one term of second year French at the college level or instructor permission. Audit available.

FR 261A. French Culture. 3 Credits.
Continuation of FR 260A. Recommended: Completion of two terms of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 261B. French Culture. 2 Credits.
Continuation of FR 260B. Recommended: Completion of two terms of second year French at the college level or instructor permission. Audit available.

FR 261C. French Culture. 1 Credit.
Continuation of FR 260C. Recommended: Completion of two terms of second year French at the college level or instructor permission. Audit available.

FR 262A. French Culture. 3 Credits.
Continuation of FR 261A. Recommended: Completion of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 262B. French Culture. 2 Credits.
Continuation of FR 261B. Recommended: Completion of second year French at the college level or instructor permission. Audit available.

FR 262C. French Culture. 1 Credit.
Continuation of FR 261C. Recommended: Completion of second year French at the college level or instructor permission. Audit available.

FR 270A. Readings in French Literature. 3 Credits.
Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257, or instructor permission. Audit available.
FR 270B. Readings in French Literature. 2 Credits.
Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257 or instructor permission. Audit available.

FR 270C. Readings in French Literature. 1 Credit.
Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257 or instructor permission. Audit available.

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 instructor permission. Audit available.

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 instructor permission. Audit available.

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 instructor permission. Audit available.

FR 272A. Readings in French Literature (Women Writers). 3 Credits.
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 instructor permission. Audit available.

FR 272B. Readings in French Literature (Women Writers). 2 Credits.
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 instructor permission. Audit available.

FR 272C. Readings in French Literature (Women Writers). 1 Credit.
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 instructor permission. Audit available.

FR 290A. French Speaking and Writing. 3 Credits.
Expands and perfects skills learned in second year French. Emphasizes speaking and writing. Recommended: Successful completion of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 290B. French Composition. 2 Credits.
Practice in developing composition skills. Recommended: Instructor permission and either second year college French with grades of A or B or native or near native ability in French. Audit available.

FR 290C. French Composition. 1 Credit.
Practice in developing composition skills. Recommended: Instructor permission and successful completion of either second year college French with grades of A or B or native or near native ability in French. Audit available.

FR 291A. French Composition. 3 Credits.
Practice in developing composition skills. Recommended: Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 291B. French Composition. 2 Credits.
Continuation of FR 290B. Recommended: Instructor permission. Audit available.

FR 291C. French Composition. 1 Credit.
Continuation of FR 290C. Recommended: Instructor permission. Audit available.

FR 292A. French Composition. 3 Credits.
Continuation of FR 291A. Recommended: Instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 292B. French Composition. 2 Credits.
Continuation of FR 291B. Recommended: Instructor permission. Audit available.

FR 292C. French Composition. 1 Credit.
Continuation of FR 291C. Recommended: Instructor permission. Audit available.

GENERAL EDUCATION DEVELOPMENT
GED 099A. GED: Special Topics. 0 Credits.
GED 0199. GED: Special Topics. 0 Credits.
GED 0746. General Ed Dev: Preparation. 0 Credits.
GED 0769. Tutoring GED. 0 Credits.

GENERAL SCIENCE
GS 106. Physical Science (Geology). 4 Credits.
Covers minerals, rocks, volcanism, earthquakes, plate tectonics, erosion and deposition by wind, glaciers and streams, weathering, fossils and geologic history. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOt, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AAGS, Science, Math, Computer Science/ASOT-B.

GS 107. Physical Science (Astronomy). 4 Credits.
Surveys astronomy to include historical development of the universe, Earth as a planet, Earth’s moon, planets of the solar system, the sun, stars and galaxies. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOt, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/ASOT-B.

GS 108. Physical Science (Oceanography). 4 Credits.
Includes the chemical, biological, physical and geological nature of the oceans. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOt, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/ASOT-B.

GS 109. Physical Science (Meteorology). 4 Credits.
Covers characteristics of our atmosphere, air pressure and winds, atmospheric moisture, large air masses, violent storms, the effect of oceans on weather and climates. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOt, Science, Math, Computer Science/AS, Science, Math, Computer Science/ASOT-B.

GEOGRAPHY
GEO 105. Introduction to Human Geography. 4 Credits.
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. Addresses these topics at varying scales and with respect to their influence on the global landscape. Focuses on current issues and events. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 106. World Regional Geography. 4 Credits.
Examines the human, cultural, and environmental geographic issues that shape the world’s regions. Includes information on spatial patterns of economic development, natural resource uses, international trade, population and migration, transportation, and cultural landscapes. Analyzes each region as a part of the larger global community, with a specific emphasis on current issues and trends. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.
GEO 204. Geography of Middle East. 4 Credits.
Examines the impacts of different physical and cultural factors on formation, development, and distribution patterns of human settlements. Examines 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. Examines the Middle East as a culturally diverse region (i.e. not a monolith) and explores the dominant value systems held by different Middle Eastern societies. Focuses on population issues, urbanization processes, traditionalism, modernity, male-female relations, feminism, democracy, and westernization. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 205. Geography of Oregon. 4 Credits.
Explores the various historical, social, economic, physical, and geographic factors that have contributed to the modern Oregon landscape. Delineates the major cultural and physical divisions within Oregon, in order to better understand the state's significant diversity. Emphasizes current issues and trends, and places the growth of Oregon into context with regional and national growth patterns. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 209. Physical Geography: Weather and Climate. 4 Credits.
Examines the processes of the atmosphere, the distribution and character of climate types, climate change and humankind as a modifier of climate. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 210. The Natural Environment. 4 Credits.
Focuses on natural processes that create physical diversity on the earth. Includes weather and climate, vegetation, soils, landforms, ecosystems, their distribution and significance. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 221. Field Geography: The Local Landscape. 4 Credits.
Uses field research methods in human geography and applications of GIS to prepare cartographic presentation of community needs and resources while working directly with a community organization. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 223. Field Geography: GPS & GIS. 4 Credits.
Provides a conceptual overview and hands-on experience with Global Positioning Systems (GPS). Includes GPS theory, techniques, and field data methods. Uses hand-held GPS units, to collect and integrate spatial and non-spatial data within a Geographic Information Systems (GIS) framework. Covers differential correction, importing features and tabular data into GIS, data conversions, building a GIS database, and creating maps from GPS data. Prerequisite/Concurrent: GEO 265. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Natural Science, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 230. Geography of Race & Ethnic Conflicts. 4 Credits.
Examines the issues of race and ethnicity and their interrelationships with contemporary global patterns of political factionalism, economic disparity, religious fervor and ethnic nationalism. Examines how these issues influence the processes of development for various countries throughout the world. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 240. Cartographic Principles and Applications. 4 Credits.
Explores basic cartographic design principles and how to apply them to produce high quality maps using GIS software. Introduces cartographic terminology, principles, and map-making tools. Covers visual representation and communication; how to turn geographic data into effective maps for print and the web; how to critique maps; map design and elements; and color, fonts, labels, and symbols for maps. Prerequisite: GEO 265, WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

GEO 242. GIS Programming. 4 Credits.
Introduces the fundamentals of computer science in the context of Geographic Information Systems (GIS). Covers concepts used in automating mapping procedures, handling different types of data, and building custom functions using ESRI's ArcGIS software platform. Provides opportunities to understand the dynamic inner workings of GIS using Python scripting language. Prerequisite: GEO 265, WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

GEO 250. Geography of Africa. 3 Credits.
Provides an understanding of the geographical perspectives - physical and cultural landscapes, people, natural resources, economic activities, regions, and political divisions - of Africa south of the Sahara or Sub-Saharan Africa. Special emphasis on the region's historical geography and on its political, cultural and demographic ramifications to explain its problems and the changes now occurring in the region. Audit available.

GEO 254. Maps & Geospatial Concepts. 4 Credits.
Introduces principles and concepts needed to understand the use and interpretation of maps, geographic information systems & science. Includes: reference systems, coordinate systems, map projections, types of maps, geographic data, scale, data visualization, and map interpretation. Serves as the foundation for the GIS course sequence. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GEO 255. Introduction to GIS (Geographical Information Systems). 4 Credits.
Provides a conceptual overview and hands-on experience usingArcGIS software. Introduces basic principles of maps and map design and usesArcGIS to create, edit, display, query and analyze geographic and tabular data and to create maps and charts. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 256. GIS Analysis. 4 Credits.
Provides a more advanced overview of ArcGIS software and introduces extensions to the main ArcMap interface. Topics include preparing data for analysis, creating and managing databases, geocoding, creating and editing spatial data, and analyzing data using the Spatial Analyst and 3D Analyst extensions. Prerequisite: GEO 256; or instructor permission. Audit available.

GEO 257. Application Topics in Geographic Information Systems. 4 Credits.
Application focus varies and provides an opportunity for extended exposure to one or more of the analytical techniques first learned in prerequisite courses. Attention to institutional and professional GIS application issues and programming environments. Prerequisite: GEO 256; or instructor permission. Audit available.

GEO 260A. CE: Geography. 1-4 Credit.
Enables students to extend their knowledge of Geography through work in settings which provide learning experiences that are not available in the classroom, but which supplement classroom learning. Under the employer's supervision the student learns to apply classroom theory to actual work situations. Department permission required. Audit available.

GEO 260B. CE: Geography - Seminar. 1 Credit.
Provides a forum in which to discuss work experiences with peers and instructor. Department permission required. Audit available.

GEO 298. Independent Study: Geography. 3 Credits.
Offers individualized study at an advanced level in areas of geography not considered in other courses to meet special interests or program requirements. Students complete a term project and readings approved by the instructor. Recommended: prior study of geography. Audit available.

GEOLOGY
G 160. Geology: Oregon Coast. 2 Credits.
Designed to introduce the relationships between the biology and geology of the Oregon Coast.
G 161. Geology: Great Basin/Cascades. 2 Credits.
Introduces the relationships between the biology and geology of the Great Basin and/or Cascades geographical area. Explores the geologic history of the Great Basin and/or Cascades geographical areas and the relationships between geology and the plants and animals of these areas. Includes a four-day field trip to the Great Basin and/or Cascades geographical area for field experience of concepts covered in the lecture portion of the class.

G 200A. Geology Field Studies. 2 Credits.
Introduces basic concepts of geology through field experience. Includes both lecture and field components. Content varies based on site location. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 200B. Geology Field Studies. 4 Credits.
Introduces basic concepts in geology through field experience. Includes both lecture and field components. Content varies based on site location. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 200C. Geology Field Studies. 6 Credits.
Introduces basic concepts in geology through field experience. Includes both lecture and field components. Content varies based on site location. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 200D. Geology Field Studies. 1 Credit.
Introduces basic concepts in geology through lecture and field trip. Content varies based on site location. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 200E. Geology Field Studies: Mount St. Helens. 1 Credit.
Introduces basic concepts in geology through lecture and a field trip in the vicinity of Mount St. Helens. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 200F. Geology Field Studies: Pacific Northwest Coast. 1 Credit.
Introduces basic geology concepts through lecture and a field trip in the vicinity of the Pacific Northwest Coast. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 200G. Geology Field Studies Columbia River Gorge. 1 Credit.
Introduces basic concepts in geology through lecture and a field trip in the vicinity of the Columbia River Gorge. Prior geology experience recommended. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

G 201. Physical Geology. 4 Credits.
Introduces physical geology which deals with minerals, rocks, internal structure of the earth and plate tectonics. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

G 202. Physical Geology. 4 Credits.
Introduces physical geology which deals with mass wasting, streams, glaciers, deserts, beaches, groundwater, and use of topographic maps. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

G 203. Historical Geology. 4 Credits.
Introduces historical geology which deals with geologic time, fossils, stratigraphic principles, and the geologic history of the North American continent. Includes weekly lab. G201 or G202 or GS106 strongly recommended. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

G 207. Geology of the Pacific Northwest. 3 Credits.
Introduces the regional geology of the Pacific Northwest with emphasis on Oregon geology. Includes basic geologic principles, earth materials and geology of Pacific Northwest provinces. Prior geology experience strongly recommended. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

G 208. Volcanoes and Their Activity. 3 Credits.
Covers the origin, activity, products, classification and hazards of volcanoes. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

G 209. Earthquakes. 3 Credits.
Covers the nature and origin of earthquakes, the characteristics of seismic waves, how earthquakes are measured, the hazards of earthquakes and the historical and geological record of earthquakes. Prerequisite: WR 115, RD 115 and MTH 65 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

G 291. Elements of Rocks and Minerals. 4 Credits.
Introduces the study of rocks and minerals that includes their classification, origin and identification. Recommended for persons interested in rock and mineral collecting, mining and prospecting. Includes weekly lab. Prerequisite: WR 115, RD 115 and MTH 95 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

G 298A. Geology Independent Study. 1 Credit.
Provides an opportunity to work independently on an individualized area of study within geology under the sponsorship of geology faculty. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Instructor permission.

G 298B. Geology Independent Study. 2 Credits.
Provides an opportunity to work independently on an individualized area of study within geology under the sponsorship of geology faculty. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Instructor permission.

G 298C. Geology Independent Study. 4 Credits.
Provides an opportunity to work independently on an individualized area of study within geology under the sponsorship of geology faculty. Prerequisites: Instructor permission.

GERMAN

GER 101. First Year German. 4 Credits.
Emphasizes active communication in beginning German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AS, Arts and Letters/AS, Arts and Letters/AS.

GER 102. First Year German. 4 Credits.
Continues the work of GER 101. Emphasizes active communication in German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of GER 101 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AS, Arts and Letters/AS.

GER 103. First Year German. 4 Credits.
Continues the work of GER 102. Emphasizes active communication in German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of GER 102 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AS, Arts and Letters/AS.

GER 111A. First Year German Conversation. 3 Credits.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or concurrent enrollment in GER 101 or 150; or instructor permission. Audit available.

GER 111B. First Year German Conversation. 2 Credits.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or concurrent enrollment in GER 101 or 150; or instructor permission. Audit available.
GER 112A. First Year German Conversation. 3 Credits.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 101 or 151; or instructor permission. Audit available.

GER 112B. First Year German Conversation. 2 Credits.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 102 or 151; or instructor permission. Audit available.

GER 112C. First Year German Conversation. 1 Credit.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 113A. First Year German Conversation. 3 Credits.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 113B. First Year German Conversation. 2 Credits.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 113C. First Year German Conversation. 1 Credit.
Practice of structures and vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 103 or 151; or instructor permission. Audit available.

GER 150. First Year German. 6 Credits.
Emphasizes active communication in beginning German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of GER 150-151 is equivalent to GER 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

GER 151. First Year German. 6 Credits.
Continues the work of GER 150. Emphasizes active communication in German. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of GER 150 or instructor permission. Completion of GER 150-151 is equivalent to GER 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

GER 201. Second Year German. 4 Credits.
Continues the work of first year German, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year German at college level or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

GER 202. Second Year German. 4 Credits.
Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of GER 201 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

GER 203. Second Year German. 4 Credits.
Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.

GER 211A. Intermediate German Conversation. 3 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.

GER 211B. Intermediate German Conversation. 2 Credits.
Stresses conversational skills at the second year level. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.

GER 211C. Intermediate German Conversation. 1 Credit.
Stresses conversational skills at the second year level. Recommended: Completion of one year of college level German, simultaneous enrollment in GER 201, or instructor permission. Audit available.
GER 261C. German Culture Through Film. 1 Credit. 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: intercultural and cultural relations, ethnic conflict, the New German Cinema, morality of the bourgeoisie, alienation of youth, roles of German men and women, self-discovery, moral disaster of the Nazi legacy, authority and rebellion. Course conducted in English and all films with English subtitles. Students may take only one course in the 261 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GER 262A. German Culture Through Film. 3 Credits. Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in seven German films. May explore issues including but not limited to: love as a medium for representing changing ideas in Germany, east vs. west, personal and national identity struggles, foreigners in Germany, stereotypes, roles of women in German society. Course conducted in English and all films with English subtitles. Students may take only one course in the 262 series: A, B, or C. Audit available.

GER 262B. German Culture Through Film. 2 Credits. Enhances understanding of German culture and contemporary social issues presented in five German films. May explore issues including but not limited to: love as a medium for representing changing ideas in Germany, east vs. west, personal and national identity struggles, foreigners in Germany, stereotypes, roles of women in German society. Course conducted in English and all films with English subtitles. Students may take only one course in the 262 series: A, B, or C. Audit available.

GER 262C. German Culture Through Film. 1 Credit. Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in four German films. May explore issues including but not limited to: love as a medium for representing changing ideas in Germany, east vs. west, personal and national identity struggles, foreigners in Germany, stereotypes, roles of women in German society. Course conducted in English and all films with English subtitles. Students may take only one course in the 262 series: A, B, or C. Audit available.

GERONTOLOGY

GRN 131. Hospice Basics. 1 Credit. Provides an introduction to hospice and hospice care, including the hospice philosophy, palliative care, pain and symptom management, death and the dying process, grief and bereavement. Also addresses hospice eligibility, ethics and confidentiality, interdisciplinary team roles, communication, advanced directives, care-giving issues, self-care, and alternative therapies.

GRN 155. Activity Director Training. 2 Credits. Course prepares students to manage an activity department; do assessments and documentation; design, schedule, and implement appropriately designed activity programs; foster healthy resident and family dynamics; facilitate resident council meetings; and manage personnel and resources. Audit available.

GRN 166. Nature Activities for Senior Living. 1 Credit. Introduces therapeutic nature activities reflecting the four seasons for older adults in a wide variety of service settings, including senior center, in-home, and day programs; independent, adult care home, assisted living, skilled and long-term care nursing, dementia care, hospice, and continuing care retirement communities; rehabilitation, corrections and more. Audit available.

GRN 170. Resident Assistant I Training. 2 Credits. Provides direct care workers in Assisted Living Facilities the knowledge and skills for both entry and performance levels as a Resident Assistant I, as described by the occupational profiles for that position. The modular, work-based training is designed to establish person-centered care competency levels in the areas of team roles and responsibilities, infection control, service plans, safety, physical effects of aging, and medications, as well as the medication administration, liaison, supervisory and reporting responsibilities of the Resident Assistant I position. Prerequisite/concurrent: GRN 170. Audit available.

GRN 171. Resident Assistant II Training. 1 Credit. Provides advanced direct care workers in Assisted Living Facilities the knowledge and skills for both entry and performance levels as a Resident Assistant II, as described by the occupational profile for that position. The modular, work-based training is designed to establish person-centered care competency levels in the areas of team roles and responsibilities, infection control, service plans, safety, physical effects of aging, and medications, as well as the medication administration, liaison, supervisory and reporting responsibilities of the Resident Assistant II position. Prerequisite/concurrent: GRN 170. Audit available.

GRN 172. Adult Care Home Training. 2 Credits. Includes the issues prospective operators and resident managers of Adult Care Home (ACH) will face providing care and services to residents who live in adult care homes. The course uses State of Oregon Adult Care Home Program curriculum and includes demonstrations and practice in the social model of care giving. Audit available.

GRN 175. The Aging Mind. 1 Credit. Explores the convergence of gerontology and recent brain science. Presents novel and combinatorial interventions based on recent research on aging brains for today’s older students and tomorrow’s gerontologists and care providers, introducing them to the emerging array of sustainable approaches to engage, stimulate, and enhance older minds. Audit available.

GRN 181. Exploring the Field of Aging. 2 Credits. Explores the range of emerging professional opportunities in the field of aging, and guides students in exploring and prioritizing potential career pathways. Includes career and labor market research; assessment of passions, interests, experiences and transferable skills; informational interviews, site visits, and networking; career and educational/training goal setting and planning. No Prerequisites. Audit available.

GRN 223. Supporting End of Life. 4 Credits. Provides healthcare workers, caregivers, religious and spiritual counselors, social workers, fiduciaries, and family members the knowledge and skills to support the end of life process with dying persons and their families. Explores the physical, emotional, spiritual, legal, and financial aspects of dying, as well as grief and bereavement. Audit available.

GRN 235. Introduction to Dementia Care. 3 Credits. Focuses on issues related to the care of older adults presenting behavioral and cognitive challenges, using a person-centered, person-directed approach. Introduces students to assessment, treatment and care of persons experiencing dementia, problematic mental health conditions, and the dying process. Recommend: WR 115 and RD 115. Audit available.

GRN 236. Dementia Care Practice. 1 Credit. Uses a case study approach to advanced behavioral and cognitive care issues, based on realistic scenarios in a variety of settings. Includes assessing appropriate long term care options for memory care, problem solving, functional levels and other challenges, managing surveys, responding to deficiencies, problem solving, and implementing fall prevention programs, and developing family education and support programs. Prerequisite: GRN 235. Audit available.

GRN 237. End of Life Therapies. 1 Credit. Focuses on a specific therapeutic approach appropriate for end of life care and explores a variety of strategies and activities designed to augment end of life and palliative care goals and enhance the quality of life for the dying person and their caregivers. Audit available.

GRN 239. End of Life Practices. 1 Credit. Focuses on specific approaches or practices appropriate for end of life care and explores a variety of strategies and activities designed to augment end of life and palliative care goals and enhance the quality of life for the dying person and their caregivers. Audit available.

GRN 240. Care and Service Coordination. 3 Credits. Provides an overview of professional standards, responsibilities, and skills required for care managers, information and resource specialists, advocates, and service coordinators working with older adults, persons with disabilities, and their families. Includes the assessment processes, care planning, resource management, service provider and financial coordination, documentation and accountability, ethics and confidentiality, advocacy, and evaluation. Introduces strength-based, person-centered, and empowerment models. Audit available.

GRN 245. Introduction to Guardianship in Oregon. 1 Credit. Introduces guardianship in Oregon. Includes a review of the court process, who qualifies for guardianship, and responsibilities of individuals serving as guardians. Presents basic information about how to be a guardian for a family member, and an overview of resources for guardians. Audit available.

GRN 246. Guardian Conservator Training. 2 Credits. Introduces professional guardianship and conservatorship in Oregon. Includes professional standards and practices, intake decision-making, working with attorneys, interactions between Oregon laws and professional standards, business and social service skills required, and legal/ethical responsibilities to the court and protected person throughout the process. Introduces national and state issues, and how to work with a care team in a professional social, medical, and legal context. Focuses on how to coordinate services and finances, use available resources, and work with physicians, care providers, social service agencies, families and others in decision-making on life, property, and care for court-determined incapacitated adults. Prerequisite/concurrent: GRN 245. Audit available.
GRN 247. Applied Legal and Policy Issues in Aging. 2 Credits.
Introduces legal and policy issues affecting older adults and their families, as well as care providers. Introduces both national and state policies that impact the services and care available to older adults and access points for these services. Includes presentations from a variety of experts within the field of social services. Provides information on long-term care facility types and how they are licensed. Medicare and Medicaid services and coverage; mental health and veteran’s services; abuse and protective services; legal planning for aging, including health care directives and powers of attorney; and advocacy and the legal process in Oregon. Focuses on how each program contributes to a web of services for older adults, as well as areas in which services may be lacking. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GRN 256. Activity Professional Training 1. 3 Credits.
Provides didactic and experiential learning to prepare for an activity professional career with older adults in long term care facilities, adult daycare and community settings. Includes overview of the activity profession, life-style human development and health, standards of practice, activity planning for quality of life in a person-centered care model, and methods of service delivery for diverse populations. Students must have completed GRN 165 or the 36 CEU state-certification Activity Director Training course. Audit available.

GRN 266. Activity Professional Training 2. 3 Credits.
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 Audit available.

GRN 267. Introduction to Professional Therapeutic Horticulture. 2 Credits.
Introductory course for students training for the horticultural therapy profession and for health and human service providers desiring to add therapeutic horticulture to the treatment milieu. Topics include: history and development of the profession; code of ethics; People-Plant Relationship research base; vocational, social wellness and therapeutic program models; overview of basic clinical skills; aspects of interdisciplinary collaboration/integration in healthcare delivery; medical terminology, volunteer program development; professional resources and horticulture skills development for therapy. Audit available.

GRN 268. Techniques & Adaptive Strategies in Therapeutic Horticulture. 2 Credits.
Prepares students to design, develop, and maintain wellness activities and therapeutic horticulture gardens and programs incorporating outdoor, outdoor and seasonal adaptations, strategies, and techniques. Includes a focus on special needs populations in retirement and 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. Students must have completed GRN 267 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 267 Audit available.

GRN 269. Therapeutic Horticulture Skills I. 2 Credits.
Introduces therapeutic skills, including therapeutic models, medical terminology, assessment, goal setting, task analysis treatment issues, activity planning, documentation and evaluation, safety and precautions as applied in a therapeutic horticulture milieu. Professional and therapeutic skill topics include learning styles, motivational management, group dynamics, therapeutic use of self, listening skills, public speaking, counseling basics, roles in interdisciplinary team, leadership role of the therapist, writing and communication skills, and ethics. Students must have completed GRN 268 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 269 Audit available.

GRN 270. Therapeutic Horticulture Programming for Adults & Children. 2 Credits.
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 horticulture. Prerequisite: GRN 269 or the equivalent course provided through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 269 Audit available.

GRN 271. Therapeutic Horticulture Skills II. 2 Credits.
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 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. Prerequisite: GRN 270 Audit available.

GRN 272. Therapeutic Garden Design, Maintenance & Programming. 3 Credits.
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, clients with stroke, and special needs gardens. Students must have completed GRN 271 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 271 Audit available.

GRN 273. Interior Plants. 3 Credits.
Focuses on identification of interior plants commonly used in therapeutic horticulture programming, houseplants as leisure/observatory and interior plantscaping. Covers cultural requirements, pests, diseases, propagation and interior use. Audit available.

GRN 280A. CE: Gerontology Internship. 1-3 Credit.
Develops practical experience, skill development and professional direction in achieving their career goals, working under supervision in an approved worksite through an intentional internship. Prerequisite: Submission of Training Agreement and Learning Objectives Forms, signed by the student and worksite supervisor to Gerontology office. Cooperative Education office requests registration. Audit available.

GRN 280B. Gerontology Internship Seminar. 1 Credit.
Develops the essential skills for successful internship. Focuses on work-based learning outcomes, working under supervision, effective communication and teamwork in organizations, professional networking, stress and conflict management, professional ethics, boundary setting, and burnout prevention. Prerequisite: GRN 181 Audit available.

GRN 282. Gerontology Professional Seminar. 2 Credits.
Provides job tools and learning outcomes assessment opportunities for students completing the Gerontology Degree and any Certificates. Focuses on reviewing and modifying career and educational/training goals; reassessing the occupational outlook and labor market; building a professional network; formulating mission and vision statements and other branding tools; developing master portfolios and resumes, job specific resumes, websites, brochures, cards, and other job tools; preparing for behavioral job interviews; and creating Degree and Certificate presentations in ePortfolios that assess learning outcomes and position students for employment and continued education. Prerequisite: GRN280B Audit available.

GRAPHIC DESIGN

GD 101. Technology and Procedures. 1 Credit.
Introduces current Macintosh computer operating system, industry technical requirements, classroom procedures and overview of the program servers and printers. Required for entry into the Graphic Design program. Prerequisite: Placement into WR 121.

GD 114. Introductory Typography. 3 Credits.
Introduces the letterform as a design element. Focuses on using typography as the primary visual in graphic design exploration. Includes font classification, composition, vocabulary and production techniques. Emphasizes hand-rendered techniques. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

GD 116. Intermediate Typography. 3 Credits.
Focuses on typographic composition, hierarchy of information, font identification and grid structure. Integrates type and image to reflect contemporary layout directions. Prerequisites: GD 101, GD 114, GD 120. Prerequisite/concurrent: GD 140.

GD 120. Graphic Design I. 3 Credits.
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 Credits.
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 Credits.
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 Credits.
Explores beginning level graphic design and publishing using professional page layout software. Introduces typographic 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 Credits.
Covers layout and design of multiple-page printed documents. Includes interactive page elements, prepress and output, file management and industry-standard design processes. Department permission required. Prerequisite: GD 140.

GD 150. Digital Illustration I. 3 Credits.
Introduces professional techniques for creating vector images. Includes templates, layers, tools and efficient construction techniques used by graphic designers. Prerequisite: GD 101, GD 114, and GD 120. Prerequisite/concurrent: GD 122, GD 140.

GD 151. Digital Illustration 2. 3 Credits.
Explores advanced techniques of creating vector illustrations for 2- and 3-dimensional applications. Prerequisite: GD 150. Prerequisite/concurrent: GD 160.

GD 160. Digital Imaging I. 3 Credits.
Introduces professional software to control digital image editing, photo manipulation and layer compositing of raster art. Emphasizes file formats, techniques and tools used by graphic designers. Placement permission slip required. Prerequisite/concurrent: GD 141 and GD 151.

GD 170. Photoshop and Design Basics. 2 Credits.
Introductory Photoshop tools and techniques combined with basic design and composition principles. Ideal for learning digital photo page layout and design. Macintosh experience highly recommended. Audit available.

GD 221. Graphic Design 4. 3 Credits.
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 Credits.
Explores branding, logo design and identity systems. Research target audience and create design solutions to communicate client and product image through logos, logotypes, icons, and symbols. Advanced computer production techniques build on previous coursework. Required: Second-year standing in the Graphic Design program.

GD 228. Professional Graphic Design Practices. 3 Credits.
Explores graphic design business strategies including methods used by design professionals to seek, acquire, and maintain employment. Required: Second year standing in the Graphic Design program. Prerequisite: GD 124.

GD 229. Portfolio Preparation. 3 Credits.
Covers the process of developing a professional-level graphic design portfolio. To enroll, student must be eligible to graduate in the current calendar year. Prerequisites: GD 228.

GD 239. Illustration for Graphic Designers. 3 Credits.
Explores a variety of traditional, non-digital illustration tools and techniques. Covers professional methods of digitizing and formatting artwork for media reproduction. Integrates illustrations into design communication materials. Prerequisites: GD 124, GD 140 and ART 131.

GD 242. Combined Graphic Programs. 3 Credits.
Covers advanced integration of professional graphic design software. Includes projects which embody conceptual development and production of visual communications. Required: second year standing in the Graphic Design program. Prerequisite: GD 260.

GD 244. Print Strategies. 3 Credits.
Presents the professionally accepted production processes, procedures, and materials used to reproduce graphic communications for distribution. Required: second year standing in the Graphic Design program. Prerequisite: GD 124.

GD 249. Design Studio. 3 Credits.
Covers development of projects for non-profit and community clients. Explores the roles and requirements of a designer in a working studio. Emphasizes client communication strategies and professional practices. Required: Second year standing in the Graphic Design program. Prerequisites: GD 141, GD 151, GD 160.

GD 260. Digital Imaging 2. 3 Credits.
Introduces advanced techniques of raster graphic production. Emphasizes practices used by graphic designers to create layouts and components for interactive content. Covers methods and procedures that are tailored for output to displays of digital devices. Required: Second year standing in the Graphic Design program. Prerequisite GD 124.

GD 280A. Cooperative Education: Graphic Design. 1-6 Credit.
Provides an opportunity to gain experience at a graphic design worksite or at a business employing graphic designers. Provides opportunities for new learning, skill development and practicing skills learned in the required courses. Requires coordination and approval by the instructor, the on-site supervisor and PCC Cooperative Education Specialist. Prerequisite: GD 141, GD 151, GD 160.

HEALTH INFORMATION MANAGEMENT

HIM 105. Ancillary Information Analysis. 3 Credits.
Develops knowledge of health care ancillary services, laboratory tests, and imaging services. English communication skills necessary. Audit available.

HIM 107. Ancillary Information Analysis Lab. 1 Credit.
Develops proficiencies in the skills taught in HIM 105. Corequisite: HIM 105.

HIM 110. Health Record Content 1. 4 Credits.
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. Audit available.

HIM 120. Health Record Content 1 Lab. 1 Credit.
Laboratory course for HIM 110 Health Record Content 1 Lab 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 Credits.
Overview of the legal system and the legal principles that govern the delivery of healthcare. Covers patient confidentiality and the disclosure of patient information. Discusses codes of ethics and bioethical issues facing today’s healthcare professionals. English communication skills necessary. Audit available.

HIM 128. Anatomy & Physiology for Health Information Management 1. 4 Credits.
Provides the conceptual framework, factual knowledge and analytical skills needed to pursue a career in health information management. Surveys anatomical terminology, basic chemistry, cell structure and function, tissues, and the following systems: integumentary, skeletal, muscular, and nervous. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HIM 129. Anatomy & Physiology for Health Information Management 2. 4 Credits.
Provides the conceptual framework, factual knowledge and analytical skills needed to pursue a career in health information management. Surveys the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive, urinary, and some coverage of human development, human genetics, and immunology. Prerequisites: HIM 128; WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HIM 131. Medical Science. 5 Credits.
Overview of disease processes as they relate to the normal physiology of the major body systems. Audit available.

HIM 136. Medications. 3 Credits.
Covers appropriate drug uses, effects, dangers, and precautions; routes of administration. Reviews common prescription abbreviations, forms of medications and basic drug categories.
HIM 141. Health Record Content 2. 3 Credits.
Continues addressing the concepts of health information management covered in Health Record Content 1 including components of the content, use and structure of non-hospital health care data. Audit available.

HIM 182. Health Care Delivery Systems. 3 Credits.
Explains the past, present, and future influences on the delivery of health care. Covers provider organizations and settings in health care, financing of health care, causes and characteristics of health care utilization in the United States, regulation and monitoring of health care systems and ethical issues associated with health care technology. Audit available.

HIM 270. ICD-10-CM Basic Coding. 4 Credits.
Covers classification of diseases and current reimbursement systems utilizing ICD-10-CM. Prerequisite: HIM 131. Audit available.

HIM 271. Quality Improvement in Healthcare. 3 Credits.
Examines and develops skills for training healthcare teams, healthcare entities, and consumers on health information. Covers project management and the quality improvement techniques in the healthcare setting. Audit available.

HIM 272. Health Information Management. 3 Credits.
Principles of personnel supervision and management of a health information department. Audit available.

HIM 273. Intermediate ICD-10-CM/PCS. 4 Credits.
Builds upon the basics skill sets learned in HIM 270. Provides continued skills development for ICD-10 coding of diagnostic and procedural statements utilizing applications of coding and reporting standards. Prerequisite: HIM 270. Audit available.

HIM 274. Quality Improvement in Healthcare Lab. 1 Credit.
Corequisite: HIM 271.

HIM 275. CPT Coding. 3 Credits.
Introduces coding and classification systems for outpatient procedures and ambulatory care facilities. Prerequisite: HIM 105, 107, 110, 120, 131, 182, MP 111, and (BI 122 or BI 233 or HIM 129). Audit available.

HIM 276. Intermediate ICD-10-CM/PCS Lab. 2 Credits.
Includes the application of skills and knowledge learned in HIM 273 utilizing case-summary coding exercises. Corequisite: HIM 273.

HIM 277. Health Information Management Lab. 2 Credits.
Develops proficiencies in the skills included in HIM 272. Corequisite: HIM 272.

HIM 280. Health Care Delivery Systems Lab. 1 Credit.
Provides an opportunity to practice and apply the knowledge learned in Data Management and Analysis. Laboratory course for HIM 280. Corequisite: HIM 280.

HIM 281. Health Information Systems. 4 Credits.
Introduces the history and current status of information systems in health care: information architectures, administrative and clinical applications, evidence-based medicine, information retrieval, decision support systems, security and confidentiality, bioinformatics, information system cycles, the electronic health record, key health information systems and standards, and medical devices. Teaches strategies and tools to insure the development and/or selection of health information systems. Discusses the role of healthcare information and communication technologies in healthcare delivery including their role in improving the quality, safety and efficiency of healthcare delivery. Audit available.

HIM 285. Healthcare Financing and Compliance. 3 Credits.
Provides an understanding of the essential components of financing and compliance in health care facilities. Audit available.

HIM 286. Data Management and Analysis Lab. 2 Credits.
Provides an opportunity to practice and apply the knowledge learned in Data Management and Analysis. Laboratory course for HIM 281. Corequisite: HIM 281.

HIM 290. HIM Teams and Training. 3 Credits.
Examines and develops skills for training healthcare teams, healthcare entities, and consumers on health information. Covers project management and the management of change in relation to health information management are also covered. Audit available.

HIM 293. Health Information Directed Practice. 2 Credits.
Provides practicum experience in health information management functions utilizing medical record technologies in a classroom simulation and under the direct supervision of facility personnel in local health care facilities. Prerequisites: HIM 270.

HE 110. CPR/AED for Professional Rescuers and Health Care Providers. 1 Credit.
Provides education and training in infant, child, adult CPR, AED, and Bag-Valve masks for people who are responsible for delivering emergency care and/or ensuring the public safety. Provides training in bloodborne pathogens. Upon successful completion of this course, students may earn an American Red Cross CPR/AED for the Professional Rescuer and Health Care Provider certificate or equivalent American Health Association equivalent. Recommend: RD 115 or equivalent placement test scores. Audit available.

HE 112. Standard First Aid and Emergency Care. 1 Credit.
Describes emergency procedures and techniques of basic life support for adult, child, or infant victims of airway obstruction, respiratory arrest and/or cardiac arrest. Provides education and training in Automated External Defibrillator. Upon successful completion of this course, students may apply for an American Red Cross First Aid card and American Red Cross Professional CPR/AED card. Recommend: RD 115 or equivalent placement test scores.

HE 113. First Aid/CPR/AED Professional Rescuers/HealthCare Providers. 1 Credit.
Introduces basic first aid knowledge in the home, work, and community environment. Gain knowledge and skills to perform Professional CPR and AED for adults/children/infants. Upon successful completion of this course, students may apply for an American Red Cross First Aid card and American Red Cross Professional CPR/AED card. Recommend: RD 115 or equivalent placement test scores.

HE 125. First Aid & Industrial Safety. 3 Credits.
Presents an overview of industrial safety procedures, accident prevention, material safety data sheets (MSDS), hazardous materials, first aid, and CPR/AED. Upon successful completion of this course, students may earn an American Red Cross Responding to Emergency First Aid and Adult CPR/AED certificate and Blood Borne Pathogens Training: Preventing Disease Transmission Certificate or American Heart Association equivalent. Recommend: RD 115 or equivalent placement test scores. Audit available.

HE 207. Seminar in Biomedical, Behavioral and Health Sciences. 1 Credit.
Introduces an interdisciplinary, science-based overview of key issues and current research in scientific fields of study related to biomedical, behavioral, and health sciences through class meetings and off-campus professional seminars sponsored by academic and research institutions throughout the Portland metropolitan area. Recommended: WR 121. Audit available.

HE 212. Women's Health. 4 Credits.
Examines women’s health issues from a local, national and international perspective exploring the impact of bi-psycho-socio-cultural factors on the diagnosis, treatment, prevention and promotion of women’s health. Audit available.

HE 213. Men's Health. 4 Credits.
Examines general and specific men’s health issues such as heart disease, prostate disorders, impotence and sexual dysfunction, HIV disease, human relationships and accidents/violence from a holistic wellness perspective. Audit available.

HE 224. Stress and Human Health. 4 Credits.
Surveys and critically analyzes the stress concept and its impact on individual health. Using a multi-dimensional model, students will explore their personal stressors and the interaction between stress, human health and disease. Recommended: WR 121. Audit available.

HE 250. Personal Health. 3 Credits.
Explores current general health issues in emotional health and stress, physical fitness, nutrition, human sexuality, communicable and degenerative diseases and drugs from a wellness perspective. Audit available.

HE 251. Community and Public Health Issues. 4 Credits.
Inquires into the causes and potential solutions for current community health issues, overviews the organization of community and health care agencies, and explores career opportunities in community health. Includes Service Learning. Audit available.

HE 252. First Aid - Basics and Beyond. 4 Credits.
Introduces first aid and emergency knowledge and skills in the work, community, and home environment. Examines first aid care in remote and wilderness settings. Upon successful completion of this course, students may earn an American Red Cross Responding to Emergencies Adult and Pediatric First Aid/CPR/AED Certificate. Recommended: RD 115 or equivalent placement test scores.
COURSE DESCRIPTIONS

HE 254. Weight Management and Personal Health. 3 Credits.
Course examines the causes of obesity, its impact on human health and explores weight loss and diet options for the individual from a holistic perspective, including social, emotional, and physical dimensions of human health. Recommended: Students have a WR 121 skill level. Audit available.

HE 255. Film and Public Health. 4 Credits.
Critically explores public health issues as they are portrayed in popular films and discusses the scientific and social underpinnings of the public health issues. Recommended: WR 121 Audit available.

HE 262. Children’s Health, Nutrition & Safety. 3 Credits.
Explores current health and safety issues for infants and young children. Issues examined include childhood illnesses and ailments, nutrition, obesity, stress, safe environment, self-esteem and general first aid. Audit available.

HE 264. Health, Food Systems, and the Environment. 3 Credits.
This course will examine how food systems influence human and environmental health. Students will explore the connections between sustainable agriculture concepts/practices, food systems, and personal and environmental health. Audit available.

HE 278. Human Health and the Environment. 3 Credits.
Examines the relationship between the environment and human health. Focuses on issues such as persistent environmental contaminants, environmental toxins, chemical exposures, climate change and accompanying disease outbreaks. Includes a strong emphasis on personal decision making. Recommend: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HE 295. Health and Fitness for Life. 2 Credits.
Explores the interrelationship of the five components of physical fitness, nutrition and stress management concepts and activities to increase individual health and wellness. Corequisite: PE 095. Audit available.

HISTORY

HST 100. Introduction to History. 3 Credits.
Provides a general introduction to the nature and methods of history. Develops intellectual and written communication skills applicable to the study of history and other academic disciplines and a wide variety of professional pursuits. Covers various periods, areas and fields of history through the use of historical case studies. Prerequisite: Placement into WR 115. Audit available.

HST 101. History of Western Civilization: Ancient to Medieval. 4 Credits.
Explores the ancient civilizations of Mesopotamia, Egypt, Greece, and Rome. Covers development of Judeo-Christian beliefs, early Islamic civilization, Byzantine civilization, and early medieval Europe. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 101H. History of Western Civilization: Ancient to Medieval Honors. 4 Credits.
Honors version of HST 101. Explores the ancient civilization of Mesopotamia, Egypt, Greece, and Rome. Covers development of Judeo-Christian beliefs, early Islamic civilization, Byzantine civilization, and early medieval Europe. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. GPA 3.25 minimum. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 102. Western Civilization: Medieval to Modern. 4 Credits.
Studies the High Middle Ages and early modern Europe, including the Renaissance, Reformation, Scientific Revolution, Enlightenment and the French Revolution. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 102H. History of Western Civilization: Medieval to Modern - Honors. 4 Credits.
Honors version of HST 102. Studies the High Middle Ages and early modern Europe, including the Renaissance, Reformation, Scientific Revolution, Enlightenment and the French Revolution. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. GPA 3.25 minimum. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 103. Western Civilization: Modern Europe. 4 Credits.
Studies history of nineteenth and twentieth-century Europe, including the Industrial Revolution, nationalism, imperialism, socialism, the Russian Revolution, Nazism, world wars and their aftermath. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 103H. History of Western Civilization: Modern Europe - Honors. 4 Credits.
Honors version of HST 103. Studies history of nineteenth and twentieth-century Europe, including the Industrial Revolution, nationalism, imperialism, socialism, the Russian Revolution, Nazism, world wars and their aftermath. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. GPA 3.25 minimum. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 104. History of Middle East. 4 Credits.
History of Eastern Civilizations: Middle East 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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 105. History of India and South Asia Region. 4 Credits.
Introduces the 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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 106. History of China. 4 Credits.
Introduces the history of China. Includes political, diplomatic, economic, social, religious, and cultural themes from pre-history to modern times. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 107. History of Korea and Japan. 4 Credits.
Explores the history of Korea and Japan and their dynamic relationship from pre-history to modern times. Includes political, diplomatic, economic, social, religious, and cultural themes. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 111. U.S. History: Skills and Issues. 1 Credit.
Enhances academic skills and deepens an understanding of American history as a discipline while supporting work performed in HST 201, 202 or 203. Includes a tutorial relating to course concepts and content, academic skill building, and a brief community-related learning project. Corequisites: HST 201 or HST 202 or HST 203. Audit available.

HST 201. History of the United States to 1840. 4 Credits.
Examines cause and effect, and significant trends and movements related to political, social and economic ideas and events from Colonial times to 1840. History courses are non-sequential and may be taken in any term and in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 202. History of the United States 1840-1914. 4 Credits.
Examines cause and effect, and significant trends and movements related to political, social and economic ideas and events from 1840 to 1914. History courses are non-sequential and may be taken in any term and in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.
HST 203. History of the United States 1914 to present. 4 Credits.
Examines the causes and effects of significant trends and movements related to political, social, and economic issues. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 204. History of Women in the U.S.: Pre-colonial to 1877. 4 Credits.
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. History courses are non-sequential and may be taken in any term and in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 205. History of Women in the U.S.: 1877 to Present. 4 Credits.
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. History courses are non-sequential and may be taken in any term and in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 218. Native American Indian History. 4 Credits.
Covers the history of American Indians, focusing on their cultural, social, and political developments. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 225. History of Women, Sex, and the Family. 4 Credits.
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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 240. Oregon History. 4 Credits.
Examines the rich and diverse history of Oregon including the significance of Oregon’s frontier heritage and Oregon’s role in American history from pre-European contact to the modern era. Explores economic, political, social, and cultural factors in terms of race, ethnicity, gender, class, and religion. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 246. Religion in the United States to 1840. 4 Credits.
Examines the basic features and effects of Native American religious revivification movements. European backgrounds of Christian denominations, development of different religious groups, church-state relations, the struggle for religious liberty and how they shaped the beliefs, behaviors and institutions of colonial America and the early United States. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 247. Religion in the United States since 1840. 4 Credits.
Examines the 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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 270. History of Mexico. 4 Credits.
Surveys Mexican history from pre-Columbian to modern times. Focuses on post contact history; the Spanish conquest, colonial Mexico, independence and its aftermath to contemporary times. Emphasizes on social, political and cultural developments and contributions by a diversity of Mexico’s peoples. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 271. History of Central America and the Caribbean. 4 Credits.
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 relations. 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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 274. African-American History - I. 4 Credits.
Examines the broad range of experiences of African Americans from the American Civil War to the 1920s. Explores both the relationship of Blacks to the larger society and the inner dynamic of the black community. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 275. African-American History - II. 4 Credits.
Examines the broad range of experiences of African Americans from the American Civil War to the 1920s. Explores both the relationship of Blacks to the larger society and the inner dynamic of the black community. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.
HST 280A. Cooperative Education: History. 1-4 Credits.
Offers the chance to extend knowledge of history through work in settings which provide learning experiences supplementing classroom learning. Department permission required. Audit available.

HST 280B. Cooperative Education: History - Seminar. 2 Credits.
Provides a forum in which to discuss work experiences with peers and instructor. Department permission required. Audit available.

HST 284. History of Africa. 4 Credits.
An introductory course designed to provide students with an understanding of major themes and issues in the culture and history of the African continent. The course will consider the rise of complex indigenous empires, smaller African societies, agricultural and technological achievements, African state systems, as well as the impact of international trade and Islam on Africa. It will examine colonialism, independence and social, political and cultural contributions of Africa’s diverse people to the global enterprise. Recommended: completion of WR 115 with a C or better grade. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 285. The Holocaust. 4 Credits.
Introduces the aftermath of World War I and the rise of the Nazis, the historical roots of anti-Semitism, the evolution of the Final Solution and its coordination in Nazi-occupied Europe, the victims of Nazi policies, the camps, the perpetrators, bystanders, and the aftermath of the Holocaust. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 298A. Independent Study: History. 2 Credits.
Offers advanced individualized study of history on a specified topic to meet special interests or program requirements. Involves completion of a project and readings on a topic approved by the instructor. Instructor permission required. Audit available.

HST 298B. Independent Study: History. 4 Credits.
Offers advanced, individualized study in a substantial area of study to meet special interests or program requirements. Involves completion of a project and readings on a substantial area of study approved by the instructor. Instructor permission required.

HONORS

HON 101. Introduction to Honors: Scholarly Inquiry. 2 Credits.
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. Prerequisites: HOR 226, 227, 228, and 290. Prerequisite/concurrent: LAT 217. Audit available.

HST 204. History of Africa. 4 Credits.
An introductory course designed to provide students with an understanding of major themes and issues in the culture and history of the African continent. The course will consider the rise of complex indigenous empires, smaller African societies, agricultural and technological achievements, African state systems, as well as the impact of international trade and Islam on Africa. It will examine colonialism, independence and social, political and cultural contributions of Africa’s diverse people to the global enterprise. Recommended: completion of WR 115 with a C or better grade. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 285. The Holocaust. 4 Credits.
Introduces the aftermath of World War I and the rise of the Nazis, the historical roots of anti-Semitism, the evolution of the Final Solution and its coordination in Nazi-occupied Europe, the victims of Nazi policies, the camps, the perpetrators, bystanders, and the aftermath of the Holocaust. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 298A. Independent Study: History. 2 Credits.
Offers advanced individualized study of history on a specified topic to meet special interests or program requirements. Involves completion of a project and readings on a topic approved by the instructor. Instructor permission required. Audit available.

HST 298B. Independent Study: History. 4 Credits.
Offers advanced, individualized study in a substantial area of study to meet special interests or program requirements. Involves completion of a project and readings on a substantial area of study approved by the instructor. Instructor permission required.

HUMANITIES

HUM 100. Introduction to Humanities. 4 Credits.
Introduces students to college-level study in the humanities; promotes a sense of humanity through such topics as literature, theatre, art, music, architecture, philosophy, and religion by critically thinking about moral values, myths, aesthetics, and liberty; all of this within historical frameworks. It is designed to reawaken our sense of wonder and curiosity about the meaning of life. It shows how the various arts and sciences intersect, influence and are influenced by cultural and historical circumstances. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

HUM 201. Humanities & Technology: Exploring Origins. 4 Credits.
Introduces concepts and approaches used in study of humanistic disciplines and surveys visions and perspectives that our culture has inherited from literature, philosophy, theology, visual arts, music, history, and mythology of Western and non-Western traditions. Focuses on selected historical periods and themes. Demonstrates quest for knowledge as a synthetic activity, relating various disciplines, traditions, and historical periods to each other. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

HUM 202. Humanities & Technology: Contemporary Issues. 4 Credits.
Looks for ways in which technology can be applied in new, socially and ethically responsible forms. Recommended: Courses should be taken sequentially. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

HUM 203. Humanities & Technology: Future Directions. 4 Credits.
Introduction to the challenges and issues facing the future. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
HUM 205. African Literature. 4 Credits.
Introduces written and oral literature of the African continent, from ancient to modern and from many different geographic regions, cultures and religions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

HUM 206. African Art. 4 Credits.
Part of three course series. Introduces a variety of art forms from different time periods and geographic areas of the African continent. Explores how art is influenced by culture, myth, economics, politics, gender, and region. Ability to understand and participate in class discussions required. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

HUM 214. Race and Racism. 4 Credits.
Introductory examination of the origins and manifestations of the socially constructed concept of race. Critical theory approach is used to analyze the manner in which the concept of race has been developed and interpreted and its influence on the social, economic and political relations between ethnic groups. Emphasis on racist ideas, theories, movements and key people and events in the evolution of race-based thinking. This study includes instances of racism in Eurasia, Africa, the Americas and Australia. Audit available.

HUM 221. Leadership Development. 4 Credits.
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 leadership and contemporary multicultural readings, experiential exercises and films. Issues of diversity, personal growth and interpersonal relationships are explored within the context of leadership development. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

INDUSTRIAL MAINTENANCE TECH
IMT 103. Applied Industrial Technology Mathematics. 4 Credits.
Provides exposure to practical math most commonly encountered in industrial settings. Concepts covered will include: fractions, decimals, units, conversions, measurements, using equations to calculate area and volume, basic algebra and trigonometry. Utilizes real-world scenarios that require application of gained math skills in order to find a solution. Prerequisite: MTH 20.

INTERIOR DESIGN
ID 120. Interior Products and Materials I. 3 Credits.
Analysis and evaluation of products utilized in the design profession including selecting case goods and upholstered goods, and emphasis on measuring and specifying floor coverings and window treatments. This course is recommended for ID 121, Interior Products/Materials II. Prerequisite: ID 131; WR 115 or placement into WR 121; MTH 20 or placement into MTH 60. Audit available.

ID 121. Sustainable Materials for Residential Interiors. 3 Credits.
Introduces kitchen and bath design skills. Prerequisites: ID 138, ID 125 or ARCH 126 or ARCH 201; Placement into MTH 60 and WR 115 or equivalent placement test scores. Audit available.

ID 122. History of Furniture-Ancient to 1800. 3 Credits.
Studies and analyzes styles of furnishings from antiquity through the 18th century. Includes contemporary usage as well as the mixing of period furniture styles. Audit available.

ID 123. History of Furniture-1800 to Present. 3 Credits.
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. Audit available.

ID 125. Computer Drafting for Interior Designers. 3 Credits.
Introduces computer-aided design software as a drafting tool in the interior design profession. Covers creation and modification of draftage such as floor plans, elevations, furniture and lighting plans, and three-dimensional projections. Focuses on interior plans and elevations of cabinetry for kitchen/bath design, writing/calculating specifications, and how to use drawings to communicate design concepts to clients. Audit available.

ID 128. Digital Rendering and Presentation. 3 Credits.
Introduces the skills necessary for the use of computer software Photoshop and InDesign for architectural design processes and presentation techniques. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ID 131. Introduction to Interiors. 3 Credits.
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. Audit available.

ID 132. Planning Interiors. 3 Credits.
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 Audit available.

ID 133. Space Planning. 3 Credits.
Studies functional and aesthetic design requirements in residential planning, kitchens and storage spaces. Relates housing aspects to needs of individuals, families, and special groups. Prerequisites: WR 115 and MTH 20 or equivalent placement test scores, and (ID 131 or ARCH 161) and (ID 125 or ARCH 126) and ARCH 110, ARCH 124, ARCH 132. Audit available.

ID 135. Professional Practices for Designers. 3 Credits.
Covers the business administration of the Interior Design profession. Includes topics on ethics, contracts, licensing, ordering, client designer relationships, costs, billing structures, and legal considerations. Prerequisite: MTH 20 or equivalent placement test scores Audit available.

ID 138. Introduction to Kitchen and Bath Planning. 3 Credits.
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. Audit available.

ID 225. CAD for Kitchen and Bath Design. 1 Credit.
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 Audit available.

ID 230. Textiles for Interiors. 3 Credits.
Provides students with knowledge and critical thinking skills required for the identification, selection, usage and care of textile products. Prerequisite: WR 115 or placement into WR 121. Audit available.

ID 234. Advanced Interiors. 3 Credits.
Offers a capstone experience to prepare for transition to the field of interior design. Requires the development of an individual self-led design project. Prerequisites: ID 120, ID 121, ID 122, ID 123, ID 132, ID 133, ID 138, ID 230, ARCH 111, ARCH 121, ARCH 127. Prerequisite/concurrent: ID 135, ID 236. Audit available.

ID 236. Lighting Design. 3 Credits.
A study of interior lighting as it relates to residential interiors including terminology, lamps, fixtures, costs, billing structures, and legal considerations. Prerequisites: WR 115 or placement into WR 121. Audit available.

ID 238. Advanced Kitchen and Bath Planning. 3 Credits.
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) Audit available.

ID 240. Interior Design Internship. 3 Credits.
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, 138, 236; ARCH 101, 111, 124. A "C" grade or better is required in all prerequisites. Audit available.

ID 280A. Cooperative Education: Kitchen and Bath. 2-6 Credit.
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. Audit available.
ITALIAN
ITAL 101. First Year Italian - First Term. 4 Credits.
Beginning communication in Italian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

JAPANESE
JPN 101. First Year Japanese. 5 Credits.
Introduces Japanese language and culture. Emphasizes effective communicative skills in written and spoken language. Examines the practice, product and perspective of Japanese culture. The first course of a three-course sequence. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

JPN 102. First Year Japanese. 5 Credits.
Introduces Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Includes the practice, product and perspective of Japanese culture. The second course of a three-course sequence. Prerequisite: JPN 101 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

JPN 103. First Year Japanese. 5 Credits.
Continues the introduction of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands the practice, product and perspective of Japanese culture. The third course of a three-course sequence. Prerequisite: JPN 102 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

JPN 111A. First Year Japanese Conversation. 3 Credits.
Offers a review of and additional practice with structures and vocabulary presented in JPN 101. For beginners. Audit available.

JPN 111B. First Year Japanese Conversation. 2 Credits.
Provides practice of structures and vocabulary of first year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 150 or instructor permission. Audit available.

JPN 111C. First Year Japanese Conversation. 1 Credit.
Provides extended practice for better understanding of the materials presented in JPN 101. For beginners. Audit available.

JPN 112A. First Year Japanese Conversation. 3 Credits.
Offers a review of and additional practice with structures and vocabulary presented in JPN 102. Recommended: Completion of JPN 101 or instructor permission. Audit available.

JPN 112B. First Year Japanese Conversation. 2 Credits.
Provides extended practice for better understanding of the materials presented in JPN 151. Recommended: Concurrent enrollment in JPN 151 or instructor permission. Audit available.

JPN 112C. First Year Japanese Conversation. 1 Credit.
Provides further practice of structures and vocabulary of first year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 151 or instructor permission. Audit available.

JPN 113A. First Year Japanese Conversation. 3 Credits.
Introduces Japanese language and culture. Emphasizes effective communicative skills in written and spoken language. Examines the practice, product, and perspective of Japanese culture. Prerequisite: JPN 101 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

JPN 150. First Year Japanese. 6 Credits.
Introduces Japanese language and culture. Emphasizes effective communicative skills in written and spoken language. Examines the practice, product, and perspective of Japanese culture. Completion of JPN 150, 151, 111B and 112C is equivalent to JPN 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

JPN 151. First Year Japanese. 6 Credits.
Continues the introduction of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands the practice, product, and perspective of Japanese culture. Completion of JPN 150, 151, 111B and 112C is equivalent to JPN 101-102-103. Prerequisite: JPN 101 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JPN 201. Second Year Japanese. 5 Credits.
Reviews and continues study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Examines new practices, products and perspectives of Japanese culture. The first course of a three-course sequence of second-year Japanese. Prerequisite: JPN 103 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JPN 202. Second Year Japanese. 5 Credits.
Expands study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Adds the new practices, products and perspectives of Japanese culture. The second course of a three-course sequence of second-year Japanese. Prerequisite: JPN 201 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JPN 203. Second Year Japanese. 5 Credits.
Continues study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands practices, products and perspectives of Japanese culture. The third course of a three-course sequence. Prerequisite: Concurrent enrollment in JPN 201 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JPN 211A. Intermediate Japanese Conversation. 3 Credits.
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 instructor permission. Audit available.

JPN 211B. Intermediate Japanese Conversation. 2 Credits.
Provides practice of structures and vocabulary of second year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 250 or instructor permission. Audit available.

JPN 211C. Intermediate Japanese Conversation. 1 Credit.
Provides further practice of structures and vocabulary of second year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 201 or instructor permission. Audit available.

JPN 212A. Intermediate Japanese Conversation. 3 Credits.
Offers a review of and additional practice with structures and vocabulary presented in JPN 202. Recommended: Completion of JPN 201 or instructor permission. Audit available.

JPN 212B. Intermediate Japanese Conversation. 2 Credits.
Provides extended practice for better understanding of the materials presented in JPN 201. Recommended: Completion of JPN 201 or instructor permission. Audit available.

JPN 212C. Intermediate Japanese Conversation. 1 Credit.
Provides extended practice for better understanding of the materials presented in JPN 201. Recommended: Completion of JPN 202 or instructor permission. Audit available.

JPN 213A. Intermediate Japanese Conversation. 3 Credits.
Provides further advanced practice of structures and vocabulary of second year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 202 or JPN 251, or instructor permission. Audit available.

JPN 213B. Intermediate Japanese Conversation. 2 Credits.
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. Audit available.

JPN 213C. Intermediate Japanese Conversation. 1 Credit.
Provides further advanced practice of structures and vocabulary of second year Japanese in a conversational format. Recommended: Concurrent enrollment in JPN 203 or instructor permission. Audit available.

JPN 250. Second Year Japanese. 6 Credits.
Reviews and continues study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Examines new practices, products and perspectives of Japanese culture. Completion of JPN 250, 251, 211B and 212C is equivalent to JPN 201-202-203. Prerequisite: JPN 103 or instructor permission. Audit available.
JPN 251. Second Year Japanese. 6 Credits.
Continues study of Japanese language and culture, emphasizing effective communicative skills in written and spoken language. Expands practices, products and perspectives of Japanese culture. Completion of JPN 250, 251, 211B and 212C is equivalent to JPN 201-202-203. Prerequisite: JPN 250 or instructor permission. Audit available.

JPN 260A. Japanese Culture. 3 Credits.
Introduces Japanese traditional and modern culture and society through analysis of cultural, historical and social issues by media product and literary work. Explores concepts such as families, social roles, friendship, pop culture, morality, philosophies and economics. Course conducted in English. Japanese materials are subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AO, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JPN 260B. Japanese Culture. 2 Credits.
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. Audit available.

JPN 251A. Japanese Culture. 3 Credits.
Introduces Japanese traditional and modern culture and society through analysis of cultural, historical and social issues by media product and literary work. Explores concepts such as self-identity, Japanese views of the West, gender roles, perspectives on death and more. Course conducted in English. Japanese materials are subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JPN 252A. Japanese Culture. 3 Credits.
Introduces Japanese traditional and modern culture and society through analysis of cultural, historical and social issues by media product and literary work. Explores concepts such as imperialistic past, neo-nationalism, cultural pride, modern social issues, marriage, religions and more. Course conducted in English. Japanese materials are subtitled in English. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

JOURNALISM

J 102. Introduction to Information Gathering. 4 Credits.
Surveys methods and strategies for acquiring information for the various mass media. Examines records, databases, sources and interview methods. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

J 103. Introduction to Media Writing. 4 Credits.
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. Audit available.

J 201. Mass Communication and Society. 4 Credits.
Surveys media of mass communication and the effects on society. Introduces the history, development and technological advances of mass communication systems and their subsequent role in society, public discourse and the individual. Includes an analysis of print and broadcast journalism, advertising, public relations, television, film and new media. Course may be taken one time for credit as J 201 or COMM 228. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit Available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

J 204. Visual Communication for the Media. 4 Credits.
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. Audit available.

LACTATION EDUCATION CONSULTANT

LEC 201. Human Lactation and Breastfeeding 1. 4.5 Credits.
Explores breastfeeding and common problems breastfeeding families’ experience. Covers the first 45 hrs of the 90 hrs of lactation education required by International Board of Lactation Consultant Examiners (IBLCE). Prerequisites: Admission to the Lactation Education and Consultant Program.

LEC 202. Human Lactation and Breastfeeding 2. 4.5 Credits.
Continues to explore lactation knowledge and skills. Covers the second 45 hrs of the 90 hrs of lactation education required by International Board of Lactation Consultant Examiners (IBLCE). Prerequisites: LEC 201.

LEC 271. Clinical Practicum 1. 1-4 Credit.
Provides on-site clinical experience education in inpatient, outpatient or community settings under the direct supervision of facility personnel. Includes exposure to working conditions and skills needed to educate and support women and their families throughout the course of breastfeeding. Prerequisites: LEC 202. Corequisite: LEC 275.

LEC 272. Clinical Practicum 2. 1-4 Credit.
Provides on-site clinical experience education in inpatient, outpatient or community settings under the direct supervision of facility personnel. Includes exposure to working conditions and skills needed when dealing with more complex maternal and pediatric breastfeeding challenges. Prerequisite: LEC 271. Corequisite: LEC 276.

LEC 273. Clinical Practicum 3. 1-4 Credit.
Provides on-site clinical experience education in inpatient, outpatient or community settings under the direct supervision of facility personnel. Includes exposure to working conditions and skills needed when dealing with more complex maternal and pediatric breastfeeding challenges. Meets the training requirements for eligibility to take the International Board of Lactation Consultant Examiners (IBLCE) exam. Prerequisite: LEC 272. Corequisite: LEC 277.

LEC 275. Practicum Seminar 1. 1 Credit.
Discusses clinical experience through analysis and reflection with peers and education faculty. Prerequisite: LEC 202. Corequisite: LEC 271.

LEC 276. Practicum Seminar 2. 1 Credit.
Continues to discuss clinical experience through analysis and reflection with peers and faculty. Prerequisite: LEC 275. Corequisite: LEC 272.

LEC 277. Practicum Seminar 3. 2 Credits.
Continues to discuss clinical experience through analysis and reflection with peers and faculty. Reviews concepts of medical ethics, professionalism and develop advanced research and presentation skills to prepare students to act as breastfeeding advocates. Prerequisite: LEC 276. Corequisite: LEC 273.

LANDSCAPE TECHNOLOGY

LAT 104. Pesticides. 3 Credits.
Federal and Oregon pesticide laws, safety, application equipment, types of pesticides and alternatives to pesticides. Recommended basic information for use in preparation for state pesticide certification. Credit is accepted towards recertification of valid Oregon pesticide license. Audit available.

LAT 106. Basic Horticulture. 4 Credits.
Botany and biology of plant physiology. Plant growth and reaction to nutrients, light, air, water, pests, and diseases. Audit available.

LAT 108. Landscape Irrigation I. 3 Credits.
Materials used, installation, and maintenance for residential and small commercial spray and drip irrigation systems. Applied math calculations used in basic hydraulics and system layout. Students will install sprinkler and drip zones. Audit available.

LAT 109. Plant Propagation. 3 Credits.
Covers propagation techniques in hardwood, softwood and conifer cuttings; budding and grafting; layering; division; seed sowing; as well as an overview of propagation facilities, irrigation and pest control. Audit available.

LAT 110. Grounds Maintenance. 3 Credits.
Covers operational procedures, materials, safety, tools and equipment. Emphasizes industry standards for scheduling, monthly, seasonal, and yearly approach to maintenance operations. Uses hands-on, practical field experience to demonstrate principles. Audit available.

LAT 111. Landscape Construction Practices. 3 Credits.
Basic materials, safety, equipment and techniques used in the construction of landscapes. Basic tool and hardware identification and use in fences, decks, hardscapes, planters and retaining walls. Hands-on projects in wood, concrete, stone, and modular pavers. Audit available.
LAT 211. Landscape Construction Practices II. 3 Credits.
Covers in-depth, the use of tools, equipment, materials (e.g. wood, pavers, stone, concrete) and advanced techniques for the construction and installation of hardscape features. Includes, hands-on projects in pathways, wood construction and retaining walls. Recommended: LAT 236. Audit available.

LAT 214. Plant Composition I. 3 Credits.
Aspects of plant arrangement in landscape projects with emphasis on plant use, styles of planting, color, texture, form and scale. Prerequisites: HOR 226, 227, 228, 290. Prerequisite/concurrent: LAT 217. Audit available.

LAT 217. Landscape Drafting. 3 Credits.
Basic drafting skills and layout techniques to produce quality design drawings. Drafting equipment, linework, lettering and drafting shortcuts. Prerequisite: HOR 290.

LAT 219. Landscape Illustration. 3 Credits.
Basic principles of graphic presentation for landscape design. Produce perspectives, isometric drawing, botanical drawings and plan renderings. Audit available.

LAT 223. Site Surveying and Analysis. 3 Credits.
Application of basic surveying techniques to landscape sites. Topographic maps and land divisions. Techniques for measuring, recording, and interpreting site information needed in the design and construction of landscapes. Prerequisite: LAT 236 or department permission. Audit available.

LAT 224. Grading and Drainage. 3 Credits.
Covers the interpretation of design documents to lay out grading and drainage projects. Includes the design and installation of drainage elements per site requirements. Introduces tools and methods for grading landscape sites based on design documents and field measurements. Prerequisites: LAT 223. Audit available.

LAT 225. Water Gardens. 3 Credits.
Covers layout and construction of water features. Introduces hands-on techniques for site development, use of liners, equipment and plumbing, placement of rock and plants, and criteria for selection of water plants and fish. Audit available.

LAT 231. Landscape Irrigation II. 4 Credits.
Information and calculations needed to layout and draw irrigation plans for conventional spray and drip systems. Irrigation controller programming and auditing. Prerequisites: LAT 108, LAT 236; or department permission. Audit available.

LAT 227. Site Surveying and Analysis. 3 Credits.
Application of basic surveying techniques to landscape sites. Topographic maps and land divisions. Techniques for measuring, recording, and interpreting site information needed in the design and construction of landscapes. Prerequisite: LAT 236 or department permission. Audit available.

LAT 235. Tree Care-Fall. 3 Credits.
Principles and practices of modern arboriculture (tree work). Tree biology, basic rope work, climbing with rope and saddle, diseases and pests, and urban forestry issues. Audit available.

LAT 236. Landscape Math. 3 Credits.
Upgrade of computational skills required in the landscape industry. Range of topics include business, construction, materials, measurement, water hydraulics, chemicals and fertilizers. Recommended: MTH 60. Prerequisite: MTH 20. Audit available.

LAT 240. Tree Care-Spring. 3 Credits.
Principles and practices of modern arboriculture (tree care). Plant growth regulators, fertilization, tree appraisals, construction protection, hazard tree management and pruning. Audit available.

LAT 241. Turfgrass Cultural Practices. 3 Credits.
Planting and maintenance techniques for specific types of turf, soil preparation, selection and application of fertilizers, equipment use for mowing, thatching, aeration and edging, pest control, and budgeting for costs. Audit available.

LAT 243. Landscape Business Operations. 3 Credits.
Requirements for beginning and operating a landscape/horticultural business. Licensing requirements, basic bookkeeping systems, insurance, liability and legal requirements, state regulations, marketing, and promotional ideas. Audit available.

LAT 250. Plant Diseases, Insects and Weed Identification. 3 Credits.
Specific identification and controls for diseases, insects, affecting the normal development of horticultural plants. Class accepted for 15 hours of recertification for State of Oregon Pesticide Certification. Audit available.

LAT 262. Native Plants of Oregon. 3 Credits.
Identification of common Native plants of Oregon. Plant communities and their environmental requirements. Adaptation and use of native plants in landscapes. Requirements include a Saturday field trip around state for hands-on field identification. Check schedule for dates. Audit available.

LAT 264. Landscape Estimating and Bidding. 3 Credits.
Methods and mechanics of estimation, interpretation of specifications and drawings, material take-offs, labor, equipment, contingency, and overhead calculations, pricing strategies, production rates, bid procedures, recordkeeping, and computer use. Prerequisites: LAT 236, LAT 108, 110, 111; or department permission. Audit available.

LAT 271. Computer Aided Landscape Design. 3 Credits.
Computer aided design (CAD) techniques needed to produce finished landscape designs, plant lists, and reports. Prerequisite: LAT 217. Audit available.

LAT 272. Sustainable Landscaping. 3 Credits.
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. Audit available.

LAT 273. Sustainable Landscape Water Management. 3 Credits.
Covers the analysis, planning, construction and management of bioswales, greenstreets, raingardens, greenwalls, greenroofs, rainwater harvesting operations and greywater systems. Includes planning and construction of a typical water management facility. Recommended: LAT 111, LAT 236, LAT 223, LAT 272. second year status. Audit available.

LAT 275. Introduction to Landscape Night Lighting. 3 Credits.
And 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. Audit available.

LAT 278. Oregon LCP Exam Preparation. 3 Credits.
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. Prerequisite: CSS 200, HOR 226, 227, 228, 290, LAT 108, 110, 111, and 236 or two years of landscape industry experience and instructor permission. Audit available.

LAT 280A. Cooperative Education: Landscape. 1-10 Credit.
Actual work experience at approved job sites or on Rock Creek grounds. Department permission required.

LAT 280B. Cooperative Work Experience- Landscape Seminar. 1 Credit.
This online seminar compliments 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 Credits.
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 Credit.
Introduces the research process and essential research skills to find, select and cite the best information. Teaches identification of research topics, planning and carrying out the research process, and to identify and cite preferred sources of credible information. Prerequisite: Placement into WR 115. Audit available.

LIB 127. Library Research and Information Literacy. 1 Credit.
Covers the research process and research skills in specific disciplines. Focuses on refining a research topic, planning and carrying out a research project, selecting credible sources of relevant information, and citing sources correctly in discipline-appropriate format. Word-processing and Internet-searching competence recommended. Audit available.

MACHINE MANUFACTURING TECH
MCH 100. Machine Tool Basics. 1 Credit.

MCH 101. Occupational Health and Safety. 3 Credits.
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Introduces the concepts of industrial health and safety regulations, compensation laws, and profitability of safety management. Audit available.

MCH 102. Introduction to Manufacturing. 3 Credits.
Technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers an introduction to the manufacturing technology discipline. Prerequisite: MCH 100. Audit available.
MCH 105. Blueprint Reading I. 1.5 Credit. Covers blueprint reading, full-view projection, sectional and auxiliary views and title blocks and drawing format which are the basis for all graphical communication in industry today. Knowledge of the techniques used on blueprints is necessary in industry whenever descriptions of size, shape, and arrangement are used to produce, service, or sell a product. Introduces blueprints and drawing techniques which will be built upon with further modules in the program. Audit available.

MCH 110. Blueprint Reading II. 1.5 Credit. Covers dimensions, notes, gears, threads and fasteners which provide the technician with a complete description of size, shape, feature location special tolerances, and assembly instructions and included so the product can be manufactured, inspected, assembled and tested to exact design specifications, and finishes on part drawings. Introduces the various types of dimensions, tolerances, notes, thread forms, representation, and specifications, finish specifications used in industry today to carry out these functions. Prerequisite: MCH 105. Audit available.

MCH 115. Geometric Dimensioning and Tolerancing. 3.5 Credits. Covers the use of geometric dimensioning and tolerancing as specified by the American Society of Mechanical Engineers in specification ASME Y14.5-2009. Introduces the symbols, concepts and basic use of these techniques for design and tolerancing used in industry today. Prerequisites: MCH 105, MCH 110. Audit available.

MCH 120. Machine Shop Math. 2 Credits. 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 system, dividing/index head and formulas as they pertain to thread calculations, gear calculations, speed and feed calculations, and taper calculations. Prerequisite: MCH 100. Audit available.

MCH 121. Manufacturing Processes I. 4 Credits. A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. An introductory course in material removal operations emphasizing drilling, milling and lathe processes with emphasis on production speeds and feeds. Prerequisite: MCH 102. Audit available.

MCH 123. Sheet Metal Fabrication. 4 Credits. A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. An introductory course in the setup and operation of manual sheet metal machinery. Prerequisite: MCH 100. Audit available.

MCH 125. Speeds and Feeds. 1 Credit. Covers how to calculate proper cutting speeds, revolutions per minute (RPM) and feeds for various machine tools and cutting conditions. Introduces how accurately calculating speeds and feeds prior to cutting on the work piece will save time, money, and avoid the waste of materials and tools. Prerequisite: MCH 100. Audit available.

MCH 130. Machine Shop Trigonometry. 2.5 Credits. Introduces the rules, methods and procedures for using trigonometry formulas that deal with both the sides and the angles of the right triangle and oblique triangle to solve for the unknown parts. Prerequisite: MCH 100. Audit available.

MCH 135. Basic Measuring Tools. 1.5 Credit. Covers use and applications associated with basic measuring tools including: the machinist’s scale, dial indicators, telescoping gage, combination square, hemeropholite caliper, surface gage, surface finish gage. Introduces the proper techniques and applications of the basic transfer measurement and comparison tools in measuring holes accurately, scribing parallel lines, finding the center of round stock, determining the factors which contribute to the quality of surface finish, and practice in identifying surface finishes. Prerequisite: MCH 100. Audit available.

MCH 145. Layout Tools. 1.5 Credit. Covers instruction and practice in cutting, filing, layout, scribbling, 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, scribe, dividers, pricx punch, ballpeen hammer, combination square set, and height gage to produce the accurate layout of part features. Prerequisite: MCH 100. Audit available.

MCH 150. Precision Measuring Tools. 1.5 Credit. 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. Audit available.

MCH 157. Project Machine Technology I. 1.5 Credit. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 158. Project Machine Technology II. 3 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 159. Project Machine Technology III. 4.5 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 160. Drilling Machines and Operations. 2 Credits. Covers setup, applications, parts and operation of the sensitive, upright and radial arm drill presses. This course introduces the commonly performed operations of drilling, reaming, counterboring, countersinking, spotting, tapping, maintaining/aligning, parallel turning, facing, filing, knurling, grooving, cutting radii, cutting tapers, and parting on the various types of turning machines used to produce part features to print specifications. Prerequisites: MCH 100, 125, 135. Audit available.

MCH 175. Band Saws. 1 Credit. Covers setup, applications, parts and operation of the vertical, and horizontal band saws and the selection/preparation of band saw blades. Introduces the skill of welding band saw blades and the common cutting operations performed on the vertical/horizontal to manufacture parts to print specifications. Prerequisite: MCH 100. Audit available.

MCH 180. Turning Machines and Operations. 4 Credits. Covers setup, applications, parts and operation of the various types of lathes. Introduces the commonly performed operations of drilling, reaming, counterboring, countersinking, spotting, tapping, maintaining/aligning, parallel turning, facing, filing, knurling, grooving, cutting radii, cutting tapers, and parting on the various types of turning machines used to produce part features to print specifications. Prerequisites: MCH 100, 125. Audit available.

MCH 190. Boring on the Lathe. 1 Credit. 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. Audit available.

MCH 195. Threading on the Lathe. 3 Credits. Covers setup, applications and operation of single point threading and geometric forming heads for the production of single and multiple lead threads. Introduces cutting, chasing, rolling and forming production of single and multiple lead threads. Also covers cutting, chasing, rolling and forming of internal/external threads on the lathe and drill press by using a single point cutting tool, tap or geometric thread cutting/rolling head on nuts, bolts, fasteners, castings and machined parts to print specifications. Prerequisites: MCH 100, 180, 190. Audit available.

MCH 205. Vertical Milling Machines and Operations. 3.5 Credits. Covers setup, applications and operation of the vertical milling machine. Introduces the commonly performed operations and uses of a variety of cutters, accurate edge finders, indicators, center/edge finder, clamping methods, squaring a block of material on all 6 sides, find the edge of a workpiece, drilling/threading a hole, performing circular cutting operations, using the boring head to bore holes on manufactured parts to print specifications. Prerequisites: MCH 100, 125. Audit available.

MCH 210. Project Machine Technology IV. 6 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 211. Project Machine Technology V. 7.5 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 212. Project Machine Technology VI. 9 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 213. Project Machine Technology VII. 10.5 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.

MCH 214. Project Machine Technology VIII. 12 Credits. Designed to allow students the opportunity to customize or select various individual modules from within the Machine Manufacturing Technology program offerings. Audit available.
MCH 215. Horizontal Milling Machines. 2.5 Credits.
Covers setup, operation and the horizontal milling machine. Introduces how to set-up horizontal milling machine and saw a slot in a piece of steel, use the indexing head to cut keyways and keyseats, use the Dividing Head to cut a gear, the basic function and uses of a jig or fixture to produce machined parts to print specifications. Prerequisites: MCH 100, 125, 205. Audit available.

MCH 222. Coordinate Measuring Machine Operation. 2 Credits.
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers the roles and types of CMMs; modes of operation; types of probes; CMM software; measuring features; alignments and reverse engineering (digitizing). Prerequisite: MCH 115. Audit available.

MCH 225. Surface Grinding Machines and Operations. 2 Credits.
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 grinding 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 methods/machines of surface grinding. Prerequisite: MCH 100. Audit available.

MCH 227. CNC Grinder Operation. 2.5 Credits.
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. Prerequisites: MCH 226. Audit available.

MCH 228. Abrasives. 1.5 Credit.
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Covers the different types of abrasives available, selection and their applications. Prerequisite: MCH 215. Audit available.

MCH 229. Rapid Prototyping. 5 Credits.
Preparatory course designed to introduce the student to the proper setups, uses and operations associated with additive and rapid manufacturing processes including but not limited to the Dimension BST Rapid Prototyping machine and its accessory devices. Prerequisites: MCH 276 or instructor approval. Audit available.

MCH 235. Tool Sharpening. 2 Credits.
Covers setup, applications and specifications of tool sharpening/reconditioning utilizing the universal tool and cutter grinder, the drill pointer and bench grinder. Introduces the sharpening of drill bits, lathe tools, end mill sides/ends, milling cutters, and various formed relieved cutters, reamers and taps to manufacturers specifications. Prerequisite: MCH 100. Audit available.

MCH 240. Cutting Tool Technology. 2 Credits.
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 workplace produced. Prerequisite: MCH 100. Audit available.

MCH 245. Metallurgy. 2.5 Credits.
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 sufficiently/required knowledge of the metal to be cut, but also how the cutting tool material and its shape will perform under various machining conditions. Prerequisite: MCH 100. Audit available.

MCH 259. CNC Programming-Lathe. 5 Credits.
Introduces the basic programming skills used with Fanuc (G&M compatible) controlled CNC turning centers. Prerequisites: MCH 100, 110, 125, 130, 160, 205. Audit available.

MCH 262. CNC Conversational Controls. 2 Credits.
Covers basics of CNC Conversational Controls. Introduces the student to CNC conversational controls and the flow of CNC conversational programming. Prerequisite: MCH 260, 261. Audit available.

MCH 263. CNC Cycle Time Reduction. 1.5 Credit.
Covers concepts associated with CNC cycle time reduction. Covers proven methods for CNC setup time reduction, and CNC cycle time reduction. Prerequisite: MCH 260, 261. Audit available.

MCH 266. Advanced CNC Programming. 3.5 Credits.
Covers FAA regulations, input/output, and verification. Emphasizes the development of skills and knowledge competencies prescribed by federal, state and local agencies. Prerequisite: MCH 260, 261. Audit available.

MCH 268. CNC Programming-Mill. 5 Credits.
Covers setup, operation and the horizontal milling machine. Introduces how to set-up horizontal milling machine and saw a slot in a piece of steel, use the indexing head to cut keyways and keyseats, use the Dividing Head to cut a gear, the basic function and uses of a jig or fixture to produce machined parts to print specifications. Prerequisites: MCH 100, 125, 205. Audit available.

MCH 272. Mastercam Level I. 5 Credits.
Introduces Mastercam operational basics. Includes terminology relevant to PC-based CAD/CAM work. Covers the use of the Mastercam menu structure and system management, 2 1/2 axis wireframe geometry creation, and toolpath creation for output of CNC “G” code for CNC milling. Audit available.

MCH 273. Mastercam Level II. 5 Credits.
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/turbo machining conventions, C-axis programming, tool libraries and solid toolpath verification. Audit available.

MCH 276. Mastercam Solids. 3 Credits.
A continuation of the CAD/CAM curriculum and explores the solids application of Mastercam as it pertains to model design and toolpath generation. Audit available.

MCH 277. Mastercam CNC/CAM Project. 3 Credits.
A continuation of the CAD/CAM curriculum. Purpose of course is to solidify the connection between Mastercam and the CNC Machine through the physical manufacturing of projects. Audit available.

MCH 278. CNC Operation - Mill. 4 Credits.
Introduces basic operation and setup skill used with Fanuc (G&M compatible) controlled CNC machining centers. Prerequisite: MCH 268. Audit available.

MCH 279. CNC Operation - Lathe. 4 Credits.
Introduces basic operation and setup skill used with Fanuc (G&M compatible) controlled CNC turning centers. Prerequisite: MCH 259. Audit available.

This work occurs outside the classroom at a work site performing machine tool setup and operation under the supervision of a professional machinist technician or supervisor. Department permission is required. Offered for one to eight credits based upon the number of clock hours completed at the work site. Audit available.

MCH 282. CNC Router Operation. 3 Credits.
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. Introduces the basic operation and setup skill used with Techno (G & M compatible) controlled CNC Routers. Prerequisite: MCH 281. Audit available.

MCH 283. CNC Router Mastercam Programming. 3 Credits.
A technical elective course in the Associate of Applied Science Degree in the Machine Manufacturing Technology program. This is a preparatory course in CAD/CAM designed to introduce personal computing and the operational basics of Mastercam Router required to produce a CNC manufactured part. Prerequisite: MCH 282. Audit available.

MCH 290. Mastercam Fundamentals Orientation. 1 Credit.
Introduces to use of Mastercam CAD/CAM software for community members, engineering, and art students to acquire skills to access additional technology in manufacturing labs, such as CNC machines, additive type RP machines, and laser systems. Create wireframe and limited solid geometry, and output of CNC code as well as STL and DXF formatted files. Audit available.

MCH 291. Laser Cutting and Engraving Fundamentals. 1 Credit.
Introduces how to setup and operate a laser engraving machine using CorelDraw software as the print driver. Includes time for student project work. Audit available.

MCH 292. FDM Additive Manufacturing Fundamentals Orientation. 1.5 Credit.
Introduces how to setup, operate, and maintain a Dimensions brand Fused Deposition Modeling (FDM) machine using solid support material, to manufacture prototype or production parts. Students will prototype their own designs using up to five cubic inches of material. Requires CAD solid model experience and access to a CAD system that outputs .STL formatted file. Audit available.
COURSE DESCRIPTIONS

MCH 292. CNC Router Fundamentals Orientation. 1 Credit.
Introduces how to use and operate a Techno brand CNC router to manufacture a simple project. Exploratory of the machines application, or as a fundamentals class for engineering and art students, and others to acquire skills to create objects of their own design. Students must be proficient at CNC ‘G’ code for milling applications prior to taking the course. Audit available.

MCH 294. 3 Dimensional Digital Laser Scanning Fundamentals. 1.5 Credits.
Introduces an understanding of how to setup and use a NextEngine brand 3 dimensional digital laser scanner and to output data for CAD software use. Exploration of the machines application, or as a fundamentals class for engineering and art students, and others to acquire skills to re-engineer objects of their own design. Students must be proficient at basic computer operational skills literacy and have an understanding of CAD solid modeling. Audit available.

MCH 296A. Rhino CAD Level 1. 2 Credits.
Introduces the features and functionality of Rhinoceros (Rhino), a NURBS modeler. Covers common commands and drawing capabilities of Rhino, including design, model editing, model properties, graphic rendering techniques, and creation of 2D drawings. Explores both 2D and 3D modeling techniques using curves, solids, and surfaces. Audit available.

MCH 297A. Rhino CAD Level 2. 2 Credits.
Covers advanced commands and drawing capabilities of Rhino, including design, model editing, model properties, graphic rendering techniques, and creation of 2D drawings. Explores both 2D and 3D modeling techniques using curves, solids, and surfaces. Prerequisites: MCH 296A Rhino CAD Level 1 or instructor approval. Audit available.

MAGNETIC RESONANCE IMAGING

MRI 101. MRI Physics I - Principles, Equipment & Safety. 2 Credits.
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 Credits.
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 Credits.
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 Credit.
Introduces the normal appearance of anatomical structures of the upper extremity, chest, abdomen and pelvis in normal planes. Enables students to differentiate 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 130. MRI Imaging Procedures and Diagnosis. 2 Credits.
Correlates and compares the normal appearance of anatomy in all body sections with pathologic findings. Discussion to include comparisons 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. Prerequisite: MRI 102, MRI 112, MRI 272.

MRI 140. MRI Registry Review. 1 Credit.
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. Prerequisite: MRI 102, MRI 112, and MRI 272.

MRI 271. MRI Clinical I. 6 Credits.
Provides clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, MR imaging procedures, MR safety, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist and will develop and exhibit proper professional work ethic. Department permission required.

MRI 272. MRI Clinical II. 6 Credits.
Provides intermediate clinical education experience in an affiliated hospital Magnetic Resonance Imaging Department under the supervision of a Registered MR Technologist and Radiologist. Includes application of equipment manipulation and operation, MR imaging procedures, MR safety, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance 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. Prerequisite: MRI 271 or MRI 121.

MRI 273. MRI Clinical III. 8 Credits.
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 required to function independently in the clinical area as a MR Technologist, and will develop and exhibit proper professional work ethic. Department permission is required. Prerequisite: MRI 272 or MRI 122.

MANAGEMENT SUPERVISORY DEVL

MSD 101. Principles of Management and Supervision. 3 Credits.
Examines concepts and practical application of fundamental supervisory skills such as planning, staffing, communicating, leading, using technology, training, managing conflict, and problem solving, in addition to “quality improvement,” safety, ethics, and effective performance reviews. Audit available.

MSD 105. Workplace Communication Skills. 3 Credits.
Examines how principles of interpersonal communication operate in a supervisory context within organizations. Includes communication processes, barriers to effective communication, impact of cultural values and norms, influences of perception and judgment, nonverbal communication, listening effectively, identifying and controlling emotions, developing an effective communications climate, and effectively managing conflict. Audit available.

MSD 107. Organizations & People. 3 Credits.
Examines what people think, feel, and do in organizations. Includes motivation theory and practice and how an individual employee’s personality and learning style affects productivity; how team dynamics affect and are affected by the individual employee; how the organization’s structure and climate affects individual and team productivity and organizational change and development. Audit available.

MSD 110. Gender Conflict Resolution. Credit.
This 10-hour workshop examines gender and multi-cultural communication. The material includes identifying and evaluating sources of conflict and developing strategies and skills to positively manage and resolve conflicts. Audit available.

MSD 111. Workplace Correspondence. 3 Credits.
Examines various skills used to enhance workplace correspondence in a diverse work environment. Includes formatting letters, resumes, applications, emails, and reports. Addressed issues such as the influence of social media, and the impact of a global work environment. Audit available.

MSD 113. Influence Without Authority. 1 Credit.
Examines the critical need for the use of influencing skills in a diverse, global workplace environment. Explores the appropriate use of power, authority and influence in building relationships. Includes influencing peers and those in authority, mutual exchange, lateral leadership, rules of reciprocation and strategies to create partnerships despite power differences. Audit available.

MSD 115. Improving Work Relations. 3 Credits.
Examines management techniques, methods and strategies for helping managers, aspiring managers and staff professionals develop their own unique managerial style. Includes improving individual effectiveness, developing interpersonal relationships, functions of working groups, multi-cultural relations, productivity and quality at the organizational level. Audit available.

MSD 116. Creative Thinking for Innovative Change. 1 Credit.
In today’s-and tomorrow’s- unpredictable and increasingly challenging world, we must make a fundamental choice: to be changed, inevitably, by the forces churning around us, or to be the change-leader through innovative actions. Learn how to jump-start your own creative, innovative thinking. Audit available.

MSD 117. Customer Relations. 3 Credits.
Examines the importance of organizational customer relations. Explores developing productive strategies for effective customer service. Includes analyzing customer needs, developing customer service policies, measuring customer satisfaction, listening skills, handling problems and concerns, building a team, and growing a business. Audit available.
MSD 119A. Intercultural Communication. 1 Credit.
Identifies sources of common cultural misunderstandings. Helps solve basic interpersonal challenges through discussion, video, and practice. Gives resources to improve relationships. Audit available.

MSD 121. Leadership Skill Development. 3 Credits.
Examines principles and practices of effective leadership. Explores strategies for developing organizational visions, communicating with clear meaning, developing trust through collaboration, creating the learning organization, and sharing leadership through empowerment. Audit available.

MSD 122. Motivation Without Manipulation. 1 Credit.
This 10-hour workshop will focus on setting a climate for intrinsic motivation. Topics include organizational theories and their impact, ranking needs in the workplace, delegation obstacles to motivation, recognition systems and emotional intelligence. Audit available.

MSD 122A. Strength Based Leadership. 1 Credit.
Examines personal strengths and explores how a strengths focus may be applied to leadership roles both personally and professionally. Enhances understanding of personal strengths and how these ideas can be used in leadership to develop and make the most of the strengths of others. Audit available.

MSD 123. Job Search Strategies. 1 Credit.
This 10-hour workshop explores strategies for finding the "right" job. Includes self-discovery, goal-setting, prospecting, networking, resume-writing, interviewing, career-planning, and self-marketing skills. Audit available.

MSD 123A. Innovation and New Products. 1 Credit.
Examines the impact of change, innovation, and technology on an organization’s ability to thrive and be competitive. Explores innovation which involves the actions and activities of people directed at changing their organizations and their business environments. Introduces how to create a comprehensive business proposal for innovation, which addresses either strategic or tactical objectives of the organization. Audit available.

MSD 128. Crisis Intervention: Handling the Difficult Person. 1 Credit.
This workshop will discuss the phases of situation crisis intervention. Topics include techniques for approaching and handling the difficult person, the potentially dangerous person, and the potentially volatile situation. Audit available.

MSD 130. Creative Problem Solving. 3 Credits.
Covers creative problem solving and thinking, steps in the creative problem-solving process, right and left brain thinking, ambiguity and imagination, overcoming barriers to creative thinking, synthesis, and applying creative problem-solving to the organization. Audit available.

MSD 133. Brave New Workplace: Strategies to Excel in World of Change. 1 Credit.
Discover tools and strategies to cultivate creative thinking your competitive edge in these turbulent, exciting times. We are surrounded by simple, obvious solutions that can dramatically increase our income, power influence and ultimately, long-term success. Our challenge is to see them! Audit available.

MSD 134. Who Moved My Cheese. 1 Credit.
Change is constant, it’s all around us and it’s inevitable. This class on transition and change is based on the #1 best seller business book by Spencer Johnson, M.D. called Who Moved My Cheese. This course is fun learning and it positively equips people to better understand and grow from change. Audit available.

MSD 138A. Male/Female Communication Differences. 1 Credit.
Examines perception of male and female stereotypes as they affect building rapport in work relationships. Includes ways to modify personal belief systems to incorporate appreciation and respect, and increasing sensitivity to create better work relationships. Audit available.

MSD 138B. Exploring the 7 Habits of Highly Effective People. 1 Credit.
Examines a comprehensive approach for increasing personal and professional effectiveness in leadership roles. Explores time tested strategies for principle based decision making, managing priorities, and building resilient relationships.

MSD 140. Management Workshops. 1 Credit.
This workshop focuses on a wide range of management issues: maintaining quality, building teams, setting ethical standards, managing diversity, implementing technology, maintaining an effective organization, balancing authority and leadership, problem solving and decision making. Audit available.

MSD 141A. The Time-Stress-Communication Triangle. 1 Credit.
This 10-hour workshop focuses on the stress control, time management, and interpersonal communication triangle. While learning to function effectively under pressure, participants will learn how to maintain good relationships, conquer interruptions, manage meetings, and build self-esteem. Audit available.

MSD 148. Asserting Yourself in the Workplace. 1 Credit.
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. Audit available.

MSD 150. Listening Skills. 1 Credit.
Acquire an understanding of the techniques of active listening and communication skills. Communication techniques such as the perception check, interpretive listening, paraphrasing and questioning will be presented, and opportunity to practice these skills included. Audit available.

MSD 151. Working with Difficult People. 1 Credit.
Examines various concepts in understanding and successfully managing difficult behavior in a diverse workplace environment. Explores strengths and weaknesses of various behavioral/conflict styles and self-assessment instruments measuring individual approaches to relationships and conflicts. Includes specific techniques in dealing with difficult encounters to enhance workplace relationships. Audit available.

MSD 157. Conflict Management. 1 Credit.
Examines various strategies to strengthen organizational efficiency by facilitating effective work relationships and conflict resolution. Explores common causes of conflict in a diverse workplace environment and successful approaches supporting a negotiation philosophy. Includes uncovering hidden agendas, maintaining respectful relationships, and fixing problems using objective criteria. Audit available.

MSD 159A. Stress Control. 1 Credit.
This 10-hour workshop focuses on understanding your own signs of stress. Includes techniques for preventing stress, identifications of personality factors and interpersonal factors related to stress, and job burnout. Audit available.

MSD 160A. Communication Styles. 1 Credit.
Concentrates on understanding various communication styles including differences in perspectives, styles, beliefs and feelings. Discussion includes building relationships at home, work and in communities with a wide range of people. Audit available.

MSD 161. Customer Relations. 1 Credit.
This 10-hour workshop discusses the principles of effective customer relations. Topics include identifying and responding to customer needs, dealing with difficult customers, developing a positive customer climate, building effective verbal and nonverbal communication skills. Audit available.

MSD 162. Coping with Angry Feelings and Angry People. 1 Credit.
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. Audit available.

MSD 164. Better Memos and Letters. 1 Credit.
This 10-hour workshop teaches effective writing skills for the work place. Topics include learning how to begin writing and when to stop, becoming more efficient and confident, learning what to include and what to avoid in memos and letters. Audit available.

MSD 174. Time Management. 1 Credit.
Examines various techniques to evaluate employee time usage increasing efficiency and productivity in the workplace. Explores skills to strengthen organizations by managing resources and time schedules in meeting goals and objectives. Includes awareness of how time is used, understanding productivity, developing a time management system, protecting individual time and specific management recommendations. Audit available.

MSD 174B. Leadership & Effective Decision Making. 1 Credit.
Covers historic examples, characteristics and styles of leadership. Participants will explore leadership activities in public and private organizations; investigate opportunities to exercise personal leadership skills, contribute to group leadership situations and discuss the impact of moral and ethical factors in decision making. Audit available.

MSD 175B. Direct Communication in the Workplace. 1 Credit.
This 10-hour workshop focuses on various communication situations (both verbal and written) in the workplace. Topics include putting oneself in the receiver's shoes, understanding what the listener's hear, adapting messages to enhance the receiver's understanding, and focusing on the results the sender wants to achieve. Audit available.

MSD 176. Nonverbal Communication. 1 Credit.
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. Audit available.
MSD 175A. Interpersonal Communication. 1 Credit.
This 10-hour workshop explores a practical approach to understanding interpersonal communication. Topics include techniques for active listening, methods for conflict resolution, and learning techniques for becoming “other person” focused. Audit available. 

MSD 177. Team Building. 1 Credit.
Examines the importance of quality teams in the workplace and the dynamics of the team building process. Explores various roles team members play in supporting a high performance work team and the value teams have on organizational effectiveness and productivity in a global economy. Includes creative team problem solving and decision making, team building tools, strategies and techniques, effective goal setting and meeting planning. Audit available.

MSD 177B. Coaching Great Performance. 1 Credit.
Centers on how to effectively work with people in a helping relationship. Introduction to coaching and gaining hands-on experience being and working with a client. Coaching helps clients examine the way they do things as well as what they do. Build your coaching skills by focusing on five key principles of coaching: coaching listening, powerful inquiry, creating choice, balance and fulfillment. Audit available.

MSD 179B. Avoid Burnout: Build Resilience. 1 Credit.
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 hidden interrelated characteristics of personal resilience; and the application of coping skills, antidotes and resilience to avoid burnout. Audit available.

MSD 180A. Goal Setting and Productivity. 1 Credit.
This 10-hour workshop focuses on steps for setting goals and successfully completing them. Includes the SMART goal approach, the benefits of setting goals, identifying and overcoming obstacles, and creating achievable, small steps. Audit available.

MSD 187. Humor in the Workplace. 1 Credit.
Concentrates on the rediscovery of laughter and humor through situational humor to re-build human connection, improve individual health, kindle creativity, and establish perspective in a work world confused by strategies such as downsizing, reengineering, outsourcing, etc. Participants should be forewarned that sporadic laughter is entirely possible. Audit available.

MSD 188B. Self Management for Success. 1 Credit.
We can’t manage others effectively until we learn to manage ourselves. This course helps you identify your roadblocks to success—including the “too much to do, too little time” syndrome, excessive stress, unclear goals, and unproductive work patterns—and provides strategies to change these habits. You will gain a new sense of enthusiasm as you redirect your energy and take a new approach to your work. Audit available.

MSD 192A. Project Management. 1 Credit.
Provides both the tools and behavioral skills necessary to manage any project successfully. All steps of the project cycle are modeled with opportunities for participants to practice each step. Participants will learn to increase productivity, present a project activity plan using professional tools and develop project team building skills. Audit available.

MSD 193. Self Esteem the Key to Success. 1 Credit.
This 10-hour workshop focuses on the cornerstone of behavior: self-esteem. Topics include learning how self-esteem affects our relationships, our ability to solve problems and set goals, our work performance, and our health. Emphasizes understanding the importance of maintaining a healthy self-esteem when handling conflict and many major dilemmas common to modern life. Audit available.

MSD 193A. Leadership Skill Development. 1 Credit.
Leadership is an essential part of running a quality organization. Learn about the various facets that define leadership today. Audit available.

MSD 194. Effective Presentation Skills. 1 Credit.
This 10-hour workshop focuses on preparing participants for giving an effective presentation. Topics include selecting topics, analyzing the audience, developing ideas, selecting and using visual aids, handling questions and overcoming objections. Each participant will give a presentation during the session. Audit available.

MSD 200. Organizations and Social Responsibility. 3 Credits.
Explores the changing relationships and responsibilities between organizations and their various stakeholders. Includes social and ethical issues of the community in which the company exists, employee rights and diversity, global corporate citizenship, role of government oversight of business, environmental issues, and consumer protection. Audit available.

MSD 202. Training the Employee. 3 Credits.
Develops practical perspectives on 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. Audit available.

MSD 206. The Troubled Employee. 3 Credits.
Reviews the factors contributing to the development of the troubled employee. Includes identifying potential troubled employee work habits and attitudes (e.g. absenteeism, tardiness, sudden personality change), Employee Assistance Programs and possible community assistance agencies. Audit available.

MSD 216. Budgeting for Managers. 3 Credits.
Examines budgeting vocabulary, finance principles, record keeping techniques, cash management, cash budgeting and capital budgeting. Recommended: Work-related budgeting experience. Prerequisites: BA 111, BA 211 or instructor permission. Audit available.

MSD 222. Human Resource Management: Personnel. 3 Credits.
Examines the basic responsibilities and concepts for managing the Human Resources function in an organization, such as: Integrating HR into the overall organization’s objectives, basic HR laws, job analysis and planning, and recruitment and selection practices. Audit available.

MSD 223. Human Resource Management: Performance and Compensation. 3 Credits.
Covers performance appraisal, indirect compensation programs, improving productivity and quality of work life, employee rights and collective bargaining. Audit available.

MSD 279. Project Management - Intro. 4 Credits.
Examines essential strategies and methods for managing projects. Applies concepts to creating model projects using a step-by-step methodology, building project charters, and developing overall project plans. Explores incorporating projects into strategic growth objectives, using project management tools, and demonstrating project presentation skills. This course is the foundation course of the Project Management series that includes CAS 220, CIS 245, and BA 255. Project Management is a broad term that can include many areas of a business. Audit available.

MSD 279A. Workplace Quality Improvement. 3 Credits.
Examines practical, hands-on tools employees use to improve their work effectiveness and workplace efficiency. Explores Continuous Quality Improvement (CQI) philosophy and tools including the Plan, Do, Check, Act Cycle (PDCA), Eight-Step Problem Solving Process, process flow analysis and other related methods. Audit available.

MSD 280A. Coop.Ed.: Management and Supervisory Development. 3 Credits.
Designed to permit a student in concert with an organization to combine new on-the-job supervisory work experience with concepts and skills learned in supervisory classes and in the process become a greater asset to the organization. Department permission required. Audit available.

Delivered 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. Audit available.

MSD 289. Trends in Management and Supervision. 1-6 Credit.
Examines specific topics of current interest not necessarily covered in other Management/Supervisory Development classes but related to the changing management field. Investigate different topics earning from 1 to 6 credits depending on the length of the class. Other workshop descriptions are available by calling the Management and Supervisory Development Department. Audit available.

MATH

MTH 108. Fundamentals of Arithmetic. 2 Credits.
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 1-20. Audit available.

MTH 15. Conquering Math Anxiety. 1 Credit.
How to manage anxiety and stress about mathematics. Personal development gives instruction in methods for dealing with excessive math anxiety. Relaxation techniques are demonstrated. Includes study skills information concerning the best ways to study and to change the perception of math anxiety.
MTH 20. Basic Math (Arithmetic). 4 Credits.
Covers fractions, decimals, percents, integers, and measurements necessary to write, manipulate, interpret, and solve application and formula problems. Introduces concepts of basic statistics. A scientific calculator is required. The TI-30X II is recommended. Prerequisite: (ABE 0782 or placement into MTH 20) and (placement into RD 80 or ESOL 250). Audit available.

MTH 20B. Basic Math. 4 Credits.
Use fractions, decimals, percents, integer arithmetic, measurements, and geometric properties to write, manipulate, interpret and solve application and formula problems. Introduces concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 21C. Percentage and Statistics. 1 Credit.
Use fractions, decimals, and percents to write, manipulate, interpret and solve application and formula applications. Introduce concepts of basic statistics, charts and graphs. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 23C. Introduction to Geometry. 1 Credit.
Use geometric properties to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisite: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 24C. Pre-Algebra. 1 Credit.
Use integer arithmetic to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 25C. Fractions. 1 Credit.
Use fractions to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 26C. Decimals. 1 Credit.
Use decimals to write, manipulate, interpret and solve application and formula problems. Concepts will be introduced numerically, graphically, symbolically, and in oral and written form. Scientific calculator with fraction capabilities required. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250) Audit available.

MTH 30. Business Mathematics. 4 Credits.
Applies arithmetic to a variety of problems found in the business field, including simple and compound interest, annuities, payroll preparation, pricing, invoice preparation, trade discounts, taxes, and depreciation. Scientific calculator required. Prerequisites: MTH 20 and (RD 80 or ESOL 250). Audit available.

MTH 60. Introductory Algebra - First Term. 4 Credits.
Introduction to algebraic concepts and processes with a focus on linear equations and inequalities in one variable. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: MTH 20 and RD 80 or ESOL 250. Audit available.

MTH 61. Introductory Algebra - Part I. 3 Credits.
Introduces algebraic concepts and processes with a focus on linear equations and inequalities in one variable. Applications, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 61 and MTH 62 to satisfy MTH 60 requirements. Prerequisite: MTH 20 AND (RD 80 or ESOL 250). Audit available.

MTH 62. Introductory Algebra - Part II. 3 Credits.
Introduces algebraic concepts and processes with a focus on linear equations in two variables, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 61 and MTH 62 to satisfy MTH 60 requirements. Must take both MTH 62 and MTH 63 to satisfy MTH 65 requirements. Prerequisite: (MTH 60 or MTH 61) AND (RD 80 or ESOL 250). Audit available.

MTH 63. Introductory Algebra - Part III. 3 Credits.
Introduces algebraic concepts and processes with a focus on functions, polynomials, and quadratic equations. Application graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Must take both MTH 62 and MTH 63 to satisfy MTH 65 requirements. Prerequisite: (MTH 60 or MTH 62) AND (RD 80 or ESOL 250). Audit available.

MTH 65. Introductory Algebra - Second Term. 4 Credits.
Introduces algebraic concepts and processes with a focus on linear systems, polynomials, and quadratic equations. Applications, graphs, functions, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (MTH 60 or MTH 62) and (RD 80 or ESOL 250) Audit available.

MTH 70. Review of Introductory Algebra. 4 Credits.
Review of algebraic concepts and processes with a focus on linear equations and inequalities in one and two variables, functions, linear systems, properties of exponents, polynomials, and quadratic equations. Applications, graphs, formulas, and proper mathematical notation are emphasized throughout the course. A scientific calculator is required. The TI-30X II is recommended. Prerequisites: (MTH 63 or MTH 65) and (RD 80 or ESOL 250) Audit available.

MTH 75. Introduction to Formal Geometry. 4 Credits.
Topics include: inductive and deductive reasoning, geometric constructions, linear properties, polyhedra, congruence, similarity, transformations, area, volume, Pythagorean Theorem, similarity, and geometric proofs. Results communicated in oral and written form. Prerequisite: MTH 60. Audit available.

MTH 76. Introduction to GeoGebra. 1 Credit.
Introduces use of the free math software GeoGebra. Explores the power of the graphing and computer algebra systems for use by a student and/or instructor. Access to a computer or tablet with Java and internet access is required. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MTH 84. Introduction to LaTeX. 1 Credit.
Explores the power of LaTeX software for use at school, home, or the workplace for mathematical documents and other applications. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

MTH 91. Intermediate Algebra Part I. 2 Credits.
Explores functions graphically and symbolically with an emphasis on function notation. Investigates functions, equations and graphs involving linear, rational, and absolute value expressions. Integrates technology throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisite: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 92. Intermediate Algebra Part II. 2 Credits.
Explores functions graphically and symbolically with an emphasis on function notation. Investigates functions, equations and graphs involving quadratic, radical, exponential and trigonometric technology throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Must take both MTH 91 and MTH 92 to satisfy MTH 95 requirements. Prerequisites: MTH 91 and placement into WR 115. Audit available.

MTH 93. Intro to the TI-89 or Casio ClassPad. 1 Credit.
Introduces basic use of graphing calculators. Explores the power of graphing calculators' computer algebra systems. The TI-89 (or TI-92 or Voyage 200) or Casio ClassPad 330 graphing calculator is required. Prerequisite: MTH 60 or equivalent placement. Audit available.

MTH 95. Intermediate Algebra. 4 Credits.
Explores functions graphically and symbolically with an emphasis on function notation. Investigate functions, equations, and graphs involving quadratic, radical, exponential, and absolute value equations. Technology is integrated throughout. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 105. Explorations in Mathematics. 4 Credits.
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. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.
MTH 111. College Algebra. 5 Credits.
Explores relations and functions graphically, numerically, symbolically, and verbally. Examines exponential, logarithmic, polynomial, and rational functions. Investigates applications from a variety of perspectives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAS, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

MTH 111H. College Algebra: Honors. 5 Credits.
An honors version of College Algebra. Explores relations and functions graphically, numerically, symbolically, and verbally. Examines exponential, logarithmic, polynomial, and rational functions. Investigates applications from a variety of perspectives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOt, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

MTH 112. Elementary Functions. 5 Credits.
Introduces displaying data with graphs, numerical descriptions of data, and measurement systems. Prerequisite: MTH 211 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAS, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

MTH 211. Foundations of Elementary Math I. 4 Credits.
Surveys mathematical topics for those interested in the presentation of mathematics at the K-9 levels. Topics emphasized are problem solving, patterns, sequences, set theory, logic, numeration systems, number bases, arithmetic operations, and number theory. Various manipulative and problem solving strategies are used. Prerequisite: MTH 95 or higher, and WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOt, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 212. Foundations of Elementary Math II. 4 Credits.
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. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAS, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 213. Foundations of Elementary Math III. 4 Credits.
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. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAS, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 241. Calculus for Management, Life and Social Science. 4 Credits.
Includes limits, continuity, derivatives, and integrals. Investigates applications from science, business, and social science perspectives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisite: (MTH 111 or MTH 111B or MTH 111C), RD 115, and WR 115, or equivalent placement. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS.

MTH 242. Statistics I. 5 Credits.
Introduces displaying data with graphs, numerical descriptions of data, producing data, elementary probability, probability distributions, confidence intervals and significance test. Investigates applications from science, business, and social science perspectives. Graphing calculator with advanced statistical program and computer software required, see instructor. Prerequisite: MTH 95 and placement into WR 121. MTH 111 is recommended. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 244. Statistics II. 4 Credits.
Includes confidence interval estimation; tests of significance including z-tests, t-tests, ANOVA, and chi-square, and inference for linear regression. Investigates applications from science, business, and social science perspectives. Graphing calculator with advanced statistical program and/or computer software required, see instructor. Prerequisites: MTH 243 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 251. Calculus I. 4 Credits.
Includes limits, continuity, derivatives and applications of derivatives. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 112 or CMET 131; and their prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 252. Calculus II. 5 Credits.
Includes antiderivatives, the definite integral, topics of integration, improper integrals, and applications of differentiation and integration. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 251. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 253. Calculus III. 5 Credits.
Includes infinite sequences and series (emphasis on Taylor series), an introduction to differential equations, and vectors in three space. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 252 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 254. Vector Calculus I. 5 Credits.
Includes multivariate and vector-valued functions from a graphical, numerical, and symbolic perspective. Applies integration and differentiation of both types of functions to solve real world problems. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 253 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 255. Differential Equations. 5 Credits.
Includes a variety of differential equations and their solutions, with emphasis on applied problems in engineering and physics. Differential equations software will be used. Students communicate results in oral and written form. Graphing calculator required. TI-89 Titanium or Casio Classpad 330 recommended. Prerequisites: MTH 253 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AGS.

MTH 261. Applied Linear Algebra I. 5 Credits.

MEDICAL ASSISTANT

MA 112. Medical Office Assistant Seminar I. 1 Credit.
The study of the health care delivery systems, medical office management, interpersonal communications; and coordination of directed practice which includes a review for the national credential examination.

MA 117. Medical Office Administrative Procedures, 3 Credits.
Covers medical reception room techniques, including appointment scheduling, telephone techniques, mail handling, financial records, accounting, accounts receivable and payable, insurance, office care and management, and medical records management.

MA 118. Medical Office Administrative Procedures (Lab). 2 Credits.
Practice and demonstrate proficiency in the procedures listed under MA 117.

MA 120. Introduction to Clinical Phlebotomy. 1 Credit.
Introduces basic venipuncture and skin puncture techniques as well as proper specimen-handling procedures as dictated by the Clinical and Laboratory Improvement Amendments (CLIA). Prepares and trains to function as an internal member of the ambulatory clinical lab care setting. Department permission required.
MA 122. Medical Office Assistant Seminar II. 1 Credit.
The study of the health care delivery systems, medical office management, interpersonal communications, and coordination of directed practice which includes a review for the national credential examination.

MA 123. Medical Office Clinical Procedures. 3 Credits.
Examination room techniques, assisting the physician with examinations, treatment and minor surgery. Covers methods of asepsis and sterilization and the proper care of equipment and supplies. Concurrent enrollment MA 124. Prerequisite: MA 111; Bl 55 or 122 or 233; MTH 22A and placement into RD 115 and WR 115.

MA 124. Medical Office Clinical Procedures (Lab). 2 Credits.
Practice and demonstrate proficiency in the procedures in MA 123. Concurrent enrollment in MA 123.

MA 131. Introduction to Medical Science. 5 Credits.
Concepts of disease processes as they relate to the normal physiology of the major body systems. Course specifically designed for students currently enrolled in the Medical Assisting program.

MA 132. Medical Office Assistant Seminar III. 1 Credit.
The study of the health care delivery systems, medical office management, interpersonal communications, and coordination of directed practice which includes a review for the national credential examination.

MA 136. Medications. 2 Credits.
Covers appropriate drug uses, effects, dangers, and precautions; routes of administration, dilutions and calculations, management and control. Review common prescription abbreviations, forms of medications and basic drug categories.

MA 180. Coding and Reimbursement. 2 Credits.
Introduces coding and reimbursement systems for physician offices and medical clinics.

MA 270. Clinical Practicum. 6 Credits.
Practice administrative skills and clinical skills in a medical clinic/physician office setting. Department permission required.

MEDICAL LABORATORY TECHNOLOGY

MLT 100. Medical Laboratory Orientation. 3 Credits.
Introduces clinical laboratory principles and procedures commonly performed in the physician's office setting, including specimen collection and handling, urinalysis, basic hematology, chemistry, serology, microbiology and quality control. Prerequisites: MP 111 and Bl 55 or Bl 122 or Bl 233. Audit available.

MLT 111. Medical Technology I. 4 Credits.
Introduces the field of clinical laboratory science, including an introduction to the use and care of the microscope and other laboratory supplies and equipment, basic blood cell morphology, basic urinalysis, bloodborne pathogens, and ABO/Rh blood grouping. Prerequisite: Acceptance into first year of Medical Laboratory Technology Program. Audit available.

MLT 112. Medical Technology II. 4 Credits.
This is the second course in a sequence introducing the field of clinical laboratory science. Includes an introduction to clinical chemistry, quality control and laboratory statistics. The study of hematology, blood collection and coagulation are also included. Prerequisite: MLT 111. Audit available.

MLT 113. Introduction to Medical Microbiology. 4 Credits.
Introduces clinical bacteriology and the taxonomic approach to major human pathogens. Presents an overview of the organization and function of the clinical microbiology laboratory. Introduces basic practices of specimen processing, handling, and work-up. Stresses the development of basic skills necessary to work in the microbiology laboratory. Prerequisite: MLT 112. Audit available.

MLT 150. Lab Assistant - Phlebotomy Practicum. 7 Credits.
Covers basic laboratory assisting skills in a clinical laboratory setting. Introduces specimen processing, phlebotomy and laboratory information systems. Stresses professionalism, interpersonal skills and safety. Department permission required. Keyboarding skills recommended. Audit available.

MLT 170. Phlebotomy Practicum. 4 Credits.
Introduces the clinical laboratory and the skills to become proficient in basic phlebotomy procedures. Covers basic specimen processing and laboratory information system. Stresses professionalism, safety and interpersonal skills in the health care setting. Department permission Audit available.

MLT 221. Clinical Chemistry I 3 Credits.
Introduces clinical chemistry and correlation of laboratory data with pathophysiology. Includes: carbohydrates; urinalysis; quality control; laboratory mathematics; and Spectrophotometry. Acceptance into the second year of the MLT Program required. Audit available.

MLT 222. Clinical Chemistry II. 4 Credits.
Introduces pathophysiology, diagnosis, and monitoring of select human diseases on an organ system basis. Includes: enzymology, acid-base balance, lipid metabolism, liver and cardiac pathophysiology, and protein metabolism. Acceptance into the second year of the MLT Program required. Audit available.

MLT 223. Clinical Chemistry III. 3 Credits.
Introduces principles of clinical chemistry relevant to all body systems and the utilization of clinical chemistry data in the management of disease. Acceptance into the second year of the MLT Program required. Audit available.

MLT 230. Body Fluids. 3 Credits.
Introduces the composition, testing procedures, and the clinical correlation of results for cerebrospinal, synovial, pleural, pericardial, seminal, amniotic, and peritoneal fluids. Presents laboratory mathematics, autoimmune diseases, special urine testing protocol surrounding the aminoacidurias and porphyrias, and fecal fat analysis and its clinical significance. Acceptance into the second year of the MLT Program required. Audit available.

MLT 241. Immunohematology I. 3 Credits.
Introduces a general understanding of basic immunology and the various antigen-antibody reactions with emphasis on agglutination reactions. Reviews and further develops knowledge and skills in the areas of the ABO and Rh blood group systems. Acceptance into the second year of the MLT Program required. Audit available.

MLT 242. Immunohematology II. 4 Credits.
Introduces principles involved in various serologic tests. Acceptance into the second year of the MLT Program required. Audit available.

MLT 250. Hematology. 4 Credits.
Introduces and develops knowledge and skills in the areas of hemoglobin, hematocrit, blood cell counts and blood cell morphology. Presents abnormalities, anomalies, and conditions affecting red cell blood cells and white blood cells. Introduces principles of automated instrumentation and application of flow cytometry to hematology are also presented. Acceptance into the second year of the MLT Program required. Audit available.

MLT 251. Medical Mycology. 3 Credits.
Introduces current molecular techniques used for identification and expands on concepts of antimicrobial testing and therapy. Acceptance into the second year of the MLT Program required. Audit available.

MLT 262. Bacteriology II. 3 Credits.
Discusses principles involved in various serologic tests. Acceptance into the second year of the MLT Program required. Audit available.

MLT 263. Medical Parasitology. 3 Credits.
Introduces the field of medical parasitology. Identifies characteristics, life cycles, pathogenicity, and testing methods for various relevant organisms. Acceptance into the second year of the MLT Program required. Audit available.

MLT 264. Medical Mycology. 3 Credits.
Introduces the field of medical mycology. Focuses on the clinically significant fungi and covers specimen processing and diagnostic procedures for the cultivation and identification of fungal pathogens. Acceptance into the second year of the MLT Program required. Audit available.

MLT 271. Clinical Laboratory Practice I. 3 Credits.
Students are assigned to various clinical laboratories to become familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community. Students gain experience in dealing with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.
MLT 272. Clinical Laboratory Practice II. 3 Credits.

Students are assigned to various clinical laboratories to be familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community. Students gain experience in dealing with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 273. Clinical Laboratory Practice III. 3 Credits.

Students are assigned to various clinical laboratories to be familiar with their organization and operation. Students also gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community. Students gain experience in dealing with patients and in performing procedures required of a laboratory technician. Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 274. Clinical Laboratory Practice IV. 8 Credits.

Students are assigned to various clinical laboratories to be 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. Audit available.

MLT 281. Clinical Seminar. 4 Credits.

Introduces new concepts in clinical laboratory medicine. Introduces professional issues in preparation for certification examinations. Explores techniques for writing standard operating procedures. Acceptance into second year of MLT Program required. Audit available.

MEDICAL PROFESSIONS

MP 109. Basic Medical Terminology. 2 Credits.

Analyzes the structure of medical words and apply this to basic anatomy, physiology and disease processes of the human body. Covers prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms for the basic body systems. Recommend: RD 90 and WR 90. Audit available.

MP 110. Basic Medical Terminology 2. 2 Credits.

Reviews in depth the basic body systems and medical terminology taught in MP 109. Expands knowledge to include prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms used in oncology, psychiatry, radiology and nuclear medicine. Recommend: RD 90 and WR 90. Prerequisite: MP 109 Audit available.

MP 111. Medical Terminology. 4 Credits.

Covers prefixes, suffixes, root words, abbreviations, conditions, symptoms and procedure terms. Course taught by body systems. English communication skills necessary. Audit available.

MP 135. Pharmacology for Allied Health. 3 Credits.

Introduces basic pharmacology principles and medicine classifications. Covers pharmacologic terminology and concepts such as drug categories, mechanism of drug action, and routes of administration. Introduces generic and proprietary names of drugs prescribed for common diseases and disorders. Pharmacology is an integral part of every aspect of health careers and this course is recommended for any individual with a health career objective. Prerequisites: MP 111 and BI 121. Audit available.

MP 140. Introduction to Health Law and Ethics. 3 Credits.

Introduces the legal aspects, code of ethics and policy issues relevant to allied health. Emphasizes confidential communication, advanced directives, consents, professional liability, medical malpractice, release of information, case studies and the professional code of ethics. Includes the concepts of professional credentialing and responsibility, liability, and working within legal/ethical boundaries. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MP 150. Introduction to Electronic Health Records. 3 Credits.

Introduces basic concepts of medical charting which are implemented and built upon in an Electronic Health Record (EHR). Introduces basic concepts of implementation and use of an EHR. Includes skill development for basic navigation of an EHR. Explores issues around privacy, security, government regulations and ethical/legal aspects of medical records in a healthcare delivery environment (hospital or clinic setting). Recommended: CAS 133 or equivalent computer and internet experience. MP 111. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MICROELECTRONICS TECHNOLOGY

MT 70. Vacuum Technology Practice. 0.5 Credits.

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. Audit available.

MT 80. Safety and Cleanroom Protocol. 2 Credits.

Covers safety consideration for working in a semiconductor industry cleanroom. Introduces safety programs in the industry. Overview includes hazardous information and how to obtain it. Covers personal safety and related equipment. Audit available.

MT 90. Basic Electronics. 3 Credits.

Includes Ohm’s Law, Kirchoff’s Voltage and Current Law in series and parallel circuits, and troubleshooting problems of basic electric circuits. Labs include basic measurement and troubleshooting techniques, use of electronic test equipment and proper documentation procedures. Prerequisite/Concurrent registration: MTH 60; WR 115. Audit available.

MT 100. Introduction to Microelectronics and Nano Technology. 3 Credits.

Introduces the methods used to manufacture Micro and Nano technologies. Traces semiconductor processing from raw material to a finished integrated circuit using planar technology. Introduces the processes and equipment used to create devices on the micro and nano scale. Emerging applications of MEMS and Nanotechnology are discussed. Prerequisite: MTH 65. Audit available.

MT 101. Introduction to Semiconductor Manufacturing. 1 Credit.

Presents an overview of careers in Microelectronics Technology. Also presents a succinct history of the semiconductor manufacturing processing and fundamental clean room protocol. Students will learn about the importance of quality and contamination control emphasis in the industry. Audit available.

MT 102. Introduction to Semiconductor Devices. 1 Credit.

Examines commonly made semiconductor devices, including diodes, solar voltaic cells, and MOSFET transistors. Includes electronic materials fundamentals of electricity, conductivity and semiconductivity. Audit available.

MT 103. Introduction to Micro and Nano Processing. 1 Credit.

Introduces the methods used to manufacture Micro and Nano technologies. Traces semiconductor processing from raw material to a finished integrated circuit using planar technology. Introduces the processes and equipment used to create devices on the micro and nano scale. Emerging applications of MEMS and Nanotechnology are discussed. Audit available.

MT 104. Introduction to Solar Voltic Processing. 1 Credit.

Introduces the methods used to manufacture silicon solar cells. Traces cell processing from raw material to a finished product using planar technology. Introduces the processes and equipment used to create portable silicon solar cells. Sigma course for applications for the solar cells and related equipment. Audit available.

MT 108. Statistics for Process Control. 2 Credits.

Covers Statistical Process Control (SPC), including plotting and interpreting charts and dealing with disposition situations. Develops understanding of what is meant by common statistical quantities such as mean, median, mode, standard deviation, skew, and also understanding of how common distributions represent real populations. Integrates practice performing computer calculation of these structures and their application to SPC. Prerequisite: MTH-60, WR-115. Audit available.

MT 109. Intro to Electronics and Instrumentation. 3 Credits.

Covers techniques of analysis and troubleshooting of basic electronic circuits that may include sensors and actuators. Labs include measurement and testing techniques, and documentation procedures. Prerequisite: Placement into MTH 60 and WR 115 or higher. Audit available.

MT 111. Electronic Circuits & Devices I. 4 Credits.

Includes Ohm’s Law, Kirchoff’s Voltage and Current Law, Superposition, Thevenin’s Theorem, and R-C circuits. Labs include basic measurement and testing procedures. Prerequisites: WR 115 and placement into or completion of MTH 95. Audit available.

MT 112. Electronic Circuits & Devices II. 4 Credits.

Covers AC circuits. Includes both single frequency and frequency response analysis of circuits containing resistance, capacitance, and inductance. Both trigonometry and phasors will be covered. Labs include circuit construction, computer simulation and testing. Prerequisites: MT 111; MTH 95. Audit available.

MT 113. Electronic Circuits & Devices III. 4 Credits.

Covers discrete semiconductor devices - diodes, BJTs, and FETs - and emerging applications of MEMS and Nanotechnology are discussed. Audit available.

MT 121. Digital Systems I. 3 Credits.

Covers combinational logic devices and circuits. Includes basic operation of logic gates, Boolean algebra, and MSI logic devices. Labs emphasize prototyping and testing of combinational logic circuits. Prerequisites: WR 115; MTH 65. Audit available.
COURSE DESCRIPTIONS

MT 122. Digital Systems II. 3 Credits.
Covers sequential logic devices and circuits. Includes the operation of latches and flip-flops, ripple and synchronous counters, shift registers, memories, and a simple microprocessor system. Labs emphasize prototyping and testing of sequential logic circuits. Prerequisite: MT 121. Audit available.

MT 131. Introduction to Programmable Logic Controllers. 3 Credits.
Introduces Programmable Logic Controller programming. Includes PLC components, programming, execution cycle, data file type and management, variable monitoring, and basic programming instructions. Recommends MT 121, MT 122 or equivalent. Prerequisite: Placement into MTH 111 and WR 121.

MT 180. High Tech Employment Strategies. 1 Credit.
Covers strategies for researching, preparing for, and acquiring a job in the high technology industries. Includes preparation of resumes, cover letters, employment application forms, and interview skills. Prerequisites: MT 101, MT 103, or TT 104, COM 240 or COMM 230 or instructor permission. Audit available.

MT 200. Semiconductor Processing. 3 Credits.
Explores aspects of semiconductor processing. Covers semiconductor device design (photo-voltaic cells, diodes, bipolar and MOSFET transistors) and the following manufacturing processes: oxidation, lithography, etch, doping, deposition, planarization, and test/soot. Prerequisites: MT 102, MT 103 or MT 104, MT 240, COMM 130 or COMM 215, or instructor permission. Audit available.

MT 222. Quality Control Methods in Manufacturing. 3 Credits.
Explores quality control methods used in semiconductor manufacturing, including statistical process control (SPC), control charts, performance representation and capability measurements. Emphasizes computer manipulation of actual data for analysis and design of quality. Prerequisites: MTH 243 or MT 108, and WR 227. Audit available.

MT 223. Vacuum Technology. 3 Credits.
Covers the theory and practice of vacuum as used in semiconductor manufacturing. Topics include vacuum principles, vacuum systems and their components such as pumps, gauges and valves, and finally vacuum troubleshooting. Prerequisites: MT 101, MT 102, MT 103 or MT 104, CH 100 or higher, WR 121, or instructor permission. Audit available.

MT 224. Process Equipment I. 3 Credits.
Part 1 of our series on semiconductor manufacturing equipment. Covers components commonly used in industrial equipment, such as controllers, controlling software, signal conditioner, sensors, switches, DC and stepper motors and their driver circuits. Also examines how these components can be used together to achieve automatic control in industrial equipment. Prerequisites: (MT 103 or MT 104), MT 113, MT 122, or instructor permission. Audit available.

MT 227. Process Equipment II. 3 Credits.
Covers subsystems of a semiconductor processing system. Includes pneumatics and robotic systems. Focuses on analysis, maintenance and troubleshooting. Prerequisite: MT 223 or CS 162, and MT 224. Audit available.

MT 228. Process Equipment III. 4 Credits.
Covers a semiconductor processing system. Includes power, vacuum, gas, delivery, robotic and control systems. Focuses on maintenance and troubleshooting. Prerequisites: MT 227, 223, 240. Audit available.

MT 240. RF Plasma Systems. 3 Credits.
Covers the theory and practice of RF (Radio Frequency) plasma systems as used in semiconductor manufacturing processes such as etching, chemical vapor deposition (CVD) and sputter deposition. Includes plasma physics, RF power system components, power matching and match circuits, and applications in semiconductor manufacturing. Prerequisite: MT 223, MT 224, CH 100 or higher, WR 227, or instructor permission. Audit available.

MULTIMEDIA

MM 110. Introduction to Multimedia. 1 Credit.
Explores the different roles, skill sets, jobs and equipment associated with the development of digital media. Examines the processes involved in producing content to meet a specific communication goal toward a target audience. Audit available.

MM 120. Multimedia Design. 2 Credits.
Introduces the multimedia development and design process. Includes identifying the functions and skills of a multimedia team, defining project goals and targets, audience, obtaining information architecture and user experience design principles, evaluating projects to determine deliverables and resource needs. Prerequisite/concurrent: MM 110, or instructor permission. Audit available.

MM 130. Multimedia Graphic Video and Audio Production. 3 Credits.
Introduces graphic, audio and video development for multimedia. Includes use of industry standard tools to produce digital media elements composed of graphics, audio and video to communicate an idea to a targeted audience. Prerequisites/concurrent: MM 120, or instructor permission. Audit available.

MM 140. Multimedia Authoring I. 3 Credits.
Covers production of an interactive multimedia project incorporating graphics, text, video, and audio using multimedia industry standard authoring software. Incorporate the principles and practices from MM 110, MM 120, and MM 130. Prerequisite/concurrent: MM 130 or instructor permission. Audit available.

MM 141. Incorporating Multimedia Elements in Presentation Software. 2 Credits.
Can plan and produce a multimedia presentation using industry level presentation software (Microsoft PowerPoint(TM)). Incorporate design theory, clip-art, video clips and sound into a Microsoft PowerPoint(TM) presentation. Emphasis on quality, presentation flow and program design. Audit available.

MM 146. Directing Actors for Recording. 4 Credits.
Explores the process of directing for camera and voice recording work within the multimedia profession. Focuses on industry standards and principles. Promotes the process for the collaboration by both performers and directors. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 150. Multimedia Project Review, Testing and Delivery. 1 Credit.
Covers the final steps of a multimedia project including, quality assurance, beta testing, group evaluation and debugging techniques. Examines the different ways multimedia is currently being used. Covers tips and techniques for successfully promoting multimedia work. Prerequisite/concurrent: MM 140 or instructor permission. Audit available.

MM 160. Marketing Yourself as a Multimedia Professional. 2 Credits.
Explores the employment and independent market for multimedia professionals, including job qualifications for various positions in small to large organizations, as well as the general business environment for multimedia production. Provides an overview and opportunity to apply methods and techniques used in finding and obtaining employment in the multimedia industry. Prerequisite/concurrent: MM 130 and MM 140 or instructor permission. Audit available.

MM 200. Multimedia Design II. 3 Credits.
Focuses on industry standards and principles. Emphasizes design concepts including layout, typography, color theory, and information architecture with the goal of creating interactive designs that balance aesthetics and function. Students participate in "real-world" client focused design projects. Prerequisites: MM 120, MM 130, CAS 175F and CAS 111D or CAS 206 or instructor permission. Audit available.

MM 230. Graphics for Multimedia. 4 Credits.
Continues to develop skills using multimedia industry standard graphic software to create, edit and optimize graphic images for use in multimedia and interactive computer applications. Explores graphic creation, color, composition and compositing of multiple graphics for use in multimedia presentations and other multimedia formats. Prerequisite: MM 130 or instructor permission. Audit available.

MM 231. Vector Graphics & Animation for the World Wide Web. 3 Credits.
Provides instruction and practice in creating short animations, long-form animations with synchronized sounds, interactive walkthrough animations and navigation controls using multimedia industry standard vector graphics and animations software. Prerequisites: MM 130, MM 140, CAS 175F and CAS 111D or CAS 206 or instructor permission. Audit available.

MM 232. Multimedia 3D Modeling and Animation. 3 Credits.
Covers how to create, edit, and take apart 3D models and animations using industry standard 3D modeling and animation software. Develops foundation skills to work, create, and navigate utilizing the features of the digital 3D modeling workspace. Explores basic elements of the 3D development of objects, environments and animations. Prerequisites: MM 130, MM 140, or instructor permission. Audit available.

MM 233. 3D Character Modeling and Animation. 3 Credits.
Continues the study of 3D emphasizing the creation of animated characters. Involves sophisticated techniques for creating organic shapes and natural motion, matching facial expressions and lip movement to dialog and using kinematics for character movement. Provides the opportunity to individually experience all aspects of production. Includes group production projects. Prerequisites: MM 232. Audit available.

MM 234. 3D for Interactivity. 3 Credits.
Includes how to design, create, and display high-quality, interactive 3D graphics and animations using industry standard 3D modeling tools. Explores and tests delivery options, limitations, and quality issues. Prerequisites: MM 232. Audit available.

MM 235. Digital Video Editing and Production. 3 Credits.
Explores the post-production process for non-linear editing of digital video for use in video production and multimedia applications. Focuses on industry standard editing software to develop the foundation grammar of editing including continuity and montage principles. Prerequisite: MM 130 or instructor permission. Audit available.
MM 235. Video Compression and Streaming on the Internet. 3 Credits.
Introduces preparing video and audio for Internet playback, incorporating the principles of quality video and audio streaming techniques and technology. Introduces adaptation of video and audio segments for streaming using industry-standard digital editing and compression software. Covers cross-platform/cross-browser projects on both PCC-provided and publically available user-generated content (UGC) hosting services to be tested for performance on Macintosh and Windows computers using various browsers and players. Prerequisite: MM 235; CAS 111D or CAS 206; or instructor permission. Audit available.

MM 251. Advanced Multimedia Project Development II. 3 Credits.
Continues to develop digital authoring skills used in planning, producing and implementing interactive projects using industry standard software. Prerequisites: MM 250. Audit available.

MM 252. Advanced Multimedia Project Development III. 3 Credits.
Further develops the project created in MM 251. Prepare an interactive multimedia project using industry standard software tools. Project development will include planning, production, project review and, implementing the evaluation suggestions. Final projects will be submitted for faculty and peer critiques and then placed on the World Wide Web. Prerequisite: MM 251 or instructor permission. Audit available.

MM 253. Intermediate Modeling and Texturing. 3 Credits.
Continues exploring 3D modeling and texturing through hands-on exercise and assignments. Explores relevant modeling tools, advanced modeling theory, and intermediate texturing techniques. Prerequisite: MM 232. Audit available.

MM 254. Character Rigging and Animation. 3 Credits.
Explores 3D character rigging and animation through lectures and assignments. Covers the creation of a professional bipedal character rigging, character animation and lip-syncing facial animation. Prerequisite: MM 232. Audit available.

MM 255. 3D Lighting and Texturing. 3 Credits.
Covers lighting techniques with an in depth focus on the technical aspects of both lighting and shadows. Includes UV unwrapping and layout skills, and advanced graphic tool techniques into order to create professional quality textures. Prerequisite: MM 232 or instructor permission. Audit available.

MM 256. Graphics for Multimedia II. 4 Credits.
Continues to develop skills using multimedia industry standard graphic software to create, edit and optimize graphic images for use in multimedia and interactive computer applications. Explores techniques to manage workflow of graphics production essential for use in multimedia presentations and other multimedia formats. Prerequisite: MM 230. Audit available.

MM 258. Video Composting and Editing II. 4 Credits.
Continues development of essential foundation skills needed to create motion graphics using industry standard software. Illustrates intermediate concepts of motion graphics, and the functions and capabilities of the software tools including their extensive compositing, keying, animation, and special effects capabilities. Prerequisite: MM 237. Audit available.

MM 259. Screenwriting/Preproduction. 4 Credits.
Focuses on the pre-production phase of narrative video projects. Provides story structure, character development, and formatting for screenwriting. Covers the transition from script to screen including shot lists, location scouting and floor plans, and other pre-production variables. Prerequisite: WR 121 and MM 260. Audit available.

MM 260. Video Production I. 4 Credits.
Covers the basics of video production, with a focus on the fundamentals of project planning, basic camera functions, shooting techniques, lighting principles, and audio recording fundamentals. Includes preproduction issues, production terminology, and evaluation of industry etiquette. Prerequisites: MM 130 and MM 245. Audit available.

MM 261. Video Production II. 4 Credits.
Continues video production at an intermediate level; includes digital camera, lighting, audio, and preproduction techniques. Focuses on narrative production techniques. Focuses on narrative production workflow, including an overview of industry crew positions, directing actors and scene coverage. Prerequisite: MM 235 and MM 260. Audit available.

MM 262. Video Production III. 4 Credits.
Explores documentary video making through hands-on exercises and assignments. Covers relevant preproduction methods and materials, the small crew field production model, interviewing techniques, and further development of camera, lighting, audio, and editing skills. Prerequisites: MM 235, MM 260, and MM 261, or instructor permission. Audit available.

MM 263. Cinematography/Lighting. 3 Credits.
Develops skills in lighting and camerawork for field and studio video production. Explores all light fixtures, safety, theory and techniques. Covers camarawork, composition, lens, techniques and theory. Explores the roles of cinematographer and gaffer. Prerequisites: MM 235 and MM 260. Audit available.

MM 264. Broadcast I. 4 Credits.
Covers broadcast television workflow and techniques, including studio production, live events and multi-camera set-up productions. Explores the roles of directing, production switching and studio crew roles. Prerequisites: MM 235 and MM 260. Audit available.
MM 265. Broadcast II, 4 Credits.
Produces productions for PCC-TV and Portland community. Extended
development in broadcast television workflow and techniques. Prerequisite: MM
264. Audit available.

MM 270. Writing for Multimedia, 3 Credits.
Introduces creating and adapting technical information and linear narratives
for non-linear, interactive multimedia applications. Includes developing ideas
into multimedia scripts, incorporating text with other media, writing narration,
and writing for voice-over, writing for interactivity, presenting text on-screen,
and writing concisely. Prerequisites: MM 120, WR 121, 122, 123 or WR 214; or
instructor permission. Audit available.

MM 280. Cooperative Work Experience in Multimedia, 1-3 Credit.
Practice and enhance skills gained in the Multimedia 100 and 200 level classes.
Spend 4 to 12 hours per week working in the multimedia industry (public/private
sector organizations) working at an approved multimedia development
company doing cooperative work. Develop career objectives by linking course
work with out-of-classroom experiences by becoming part of the "multimedia
team" learning cooperation, team building, communication skills and project
development. Prerequisites: MM 230, 231, 235, 236, 240, 241, 245 or instructor
permission. Audit available.

MUSIC

MUS 101. Introduction to Music (Basic Materials), 3 Credits.
Introduces the basic components of music such as rhythm, melody, harmony
and structure. Includes basic note reading and building of music literacy skills.
No prior music experience required. Audit available.

MUS 105. Music Appreciation, 3 Credits.
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. Prerequisites/
concurrent: WR 115 or equivalent placement test scores. Audit available. This
course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and
Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B, Arts and Letters/AS,
Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 106. Opera Appreciation, 3 Credits.
Covers musical and dramatic analysis of opera. Read about and listen to operas
dating from 1600 to the present. Prerequisites: WR 115, RD 115 and MTH 20 or
equivalent placement test scores. Audit available.

MUS 108. Music Cultures of the World, 3 Credits.
Examines musical cultures throughout the world with attention to cultural
contexts and musical styles, including but not limited to Africa, the Americas,
Asia, Near East, Europe and the South Pacific. Prerequisite/concurrent: WR
115 or equivalent placement test scores. Audit available. This course fulfills the
following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and

MUS 110, Fundamentals of Music, 4 Credits.
Covers the basic concepts of music: pitch, rhythm, meter, intervals, modes,
scales, harmony and music notation. Introduces the science of sound and
music theory terminology. Begins development of musical performance skills
through singing, clapping and performance on the piano keyboard. Also
includes basic aural skills. Course intended for non-music majors and to
prepare students for further music theory study. Prerequisite/concurrent: WR
115 or equivalent placement test scores. Audit available. This course fulfills the
following GE requirements: Arts and Letters/AAOT, Arts and Letters/ASOT-B,
Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 111, Music Theory I (part one), 3 Credits.
Covers music theory as exhibited in the works of the great composers of the
17th and 18th centuries. Includes notation, pitch, meter, tonality, modality,
harmony and diatonic function. Basic music analysis focusing on harmonic
function and figured bass notation. Includes written composition. Part one of
three-term sequence. MUS 111C recommended for music transfer students.
Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test
scores, and MUS 110. Audit available. This course fulfills the following GE
requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS,
Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 111C. Music Theory I: Sight Singing and Ear Training (part one), 1 Credit.
Focuses on the development of skills related to the notation, performance and
aural recognition of music. Includes meter, rhythm, diatonic melodies, triads,
solfege, intervals, and harmonic function. Part one of three term sequence.
Corequisite: MUS 111. Audit available.

MUS 112. Music Theory I (part two), 3 Credits.
Continues work from MUS 111. Focuses on four-part harmony and common
practice period voice leading. Includes figured bass realization, harmonic
analysis and written composition. Part two of three-term sequence. Concurrent
enrollment in MUS 112C is required for music transfer students. Prerequisites:
MUS 111 and its prerequisite requirements. Audit available. This course fulfills
the following GE requirements: Arts and Letters/AAOT, Arts and Letters/ASOT-B,
Arts and Letters/AGS, Arts and Letters/AS.

MUS 112C. Music Theory I: Sight Singing and Ear Training (part two), 1 Credit.
Continues development of skills from MUS 111C. Includes harmonic
implications in melody, complex rhythms, beat subdivisions and four-part
harmony. Introduces melodic chromaticism, extended harmony and phrase
relationships. Part two of three-term sequence. Recommended for music
transfer students. Corequisite: MUS 112A Prerequisite: MUS 111C. Corequisite:
MUS 112: Audit available.

MUS 113. Music Theory I (part three), 3 Credits.
Continues development of skills learned in MUS 112C. Includes two-part
melodic and rhythmic notation. Introduces secondary function and diatonic
Prerequisite: MUS 112C. Corequisite: MUS 113. Audit available.

MUS 125. Guitar Clinic and Workshop, 2 Credits.
Focus on guitar technique as applied to classical, acoustic and electric guitar
playing. Topics include warm-ups, development of finger dexterity, fretting
hand strength/ endurance, efficiency and accuracy, and good tone production.
Overview of important guitarists and teaching methods. Also includes fretboard
theory and live performance Prerequisite: MUS 191. Audit available.

MUS 131. Group Vocal, 2 Credits.
Covers basic technique and theory of vocal proficiency necessary to develop
individual ability in solo or ensemble settings. Includes the application of breath
support, projection, phrasing, and musical styles to support individual voices
in solo repertoire. Audit available.

MUS 153A. Musical Theatre Vocal, 1 Credit.
Selection by audition to cast of musical theatre production. Evening rehearsals
during term, performances at conclusion of term. Audit available.

MUS 153B. Musical Theatre Vocal, 2 Credits.
Selection by audition to cast of musical theatre production. Evening rehearsals
during term, performances at conclusion of term. Audit available.

MUS 153C. Musical Theatre Vocal, 3 Credits.
Selection by audition to cast of musical theatre production. Evening rehearsals
during term, performances at conclusion of term. Audit available.

MUS 158A. Chamber Ensemble, 1 Credit.
Provides an opportunity for instrumentalists to practice and perform.
Includes conducted and coached rehearsals for public performance.
Covers performance practice and repertory for chamber orchestra and small
ensembles. Requires the ability to read music. Audit available.

MUS 158B. Chamber Ensemble, 1 Credit.
Provides an opportunity for instrumentalists to practice and perform.
Includes conducted and coached rehearsals for public performance.
Covers performance practice and repertory for chamber orchestra and small
ensembles. Requires the ability to read music. Prerequisite: MUS 158A. Audit
available.

MUS 158C. Chamber Ensemble, 1 Credit.
Provides an opportunity for instrumentalists to practice and perform.
Includes conducted and coached rehearsals for public performance.
Covers performance practice and repertory for chamber orchestra and small
ensembles. Requires the ability to read music. Prerequisite: MUS 158B. Audit
available.
MUS 158D. Chamber Ensemble. 1 Credit.
Provides an opportunity for instrumentalists to practice and perform. Includes conducted and coached rehearsals for public performance. Covers performance practice and repertory for chamber orchestra and small ensembles. Requires the ability to read music. Prerequisite: MUS 158C. Audit available.

MUS 158E. Chamber Ensemble. 1 Credit.
Provides an opportunity for instrumentalists to practice and perform. Includes conducted and coached rehearsals for public performance. Covers performance practice and repertory for chamber orchestra and small ensembles. Requires the ability to read music. Prerequisite: MUS 158D. Audit available.

MUS 158F. Chamber Ensemble. 1 Credit.
Provides an opportunity for instrumentalists to practice and perform. Includes conducted and coached rehearsals for public performance. Covers performance practice and repertory for chamber orchestra and small ensembles. Requires the ability to read music. Prerequisite: MUS 158D. Audit available.

MUS 170. Music and Computers. 2 Credits.
Introduction to computer technology for musicians and musicians and music major. Focuses on software-based music composition and notation. Introduces electronic music composers and compositional techniques. Basic knowledge of computers is recommended. Prerequisite: MUS 110 or MUS 111. Audit available.

MUS 190. Introduction to Piano. 2 Credits.
Group instruction in piano performance. Development of basic piano skills and the introduction to related musical concepts. Focus given to basic keyboard technique, note-reading, rhythm, chords and repertoire performance. No previous experience required. Not designed for Music majors. Audit available.

MUS 191. Class Guitar. 2 Credits.
Group instruction in guitar. Covers traditional classical guitar technique. Focuses on note reading and basic music theory as applied 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. Audit available.

MUS 191P. Class Piano I. 2 Credits.
Group instruction in piano performance. Intent of course is the development of piano proficiency skills. Focus given to basic keyboard technique, score reading and performance, sight-reading, harmonization, accompanying, and transposition. Designed for music majors but is available to all students. No previous experience required. Audit available.

MUS 192. Class Guitar II. 2 Credits.
Group instruction in guitar. Continues material presented in Music 191. Topics include reading notes up to the fifth position, advanced left hand technique, chord structure, flamenco technique and music theory as it applies to the guitar. Includes both solo and ensemble performance. More in depth study of the historical origins of the guitar, the repertoire and its major players. Prerequisite: MUS 191 or knowledge of first position note reading. Audit available.

MUS 192P. Class Piano II. 2 Credits.
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. Audit available.

MUS 193. Class Guitar III. 2 Credits.
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. Audit available.

MUS 193P. Class Piano III. 2 Credits.
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 available to all students. Prerequisite: MUS 192P. Audit available.

MUS 195. Symphonic Band. 1 Credit.
Large conducted ensemble for brass, woodwind and percussion instruments rehearsed 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. Audit available.

MUS 195A. Symphonic Band. 1 Credit.
Provides the opportunity to participate in a conducted symphonic band for brass, woodwind and percussion instrumentalists. Includes rehearsal and performance of repertoire from the 17th-21st centuries. Available to students with previous high-school level band experience or equivalent.

MUS 195B. Symphonic Band. 1 Credit.
Provides the opportunity to participate in a conducted symphonic band for brass, woodwind and percussion instrumentalists. Includes rehearsal and performance of repertoire from the 17th-21st centuries. Prerequisite: MUS 195A. Audit available.

MUS 195C. Symphonic Band. 1 Credit.
Provides the opportunity to participate in a conducted symphonic band for brass, woodwind and percussion instrumentalists. Includes rehearsal and performance of repertoire from the 17th-21st centuries. Prerequisite: MUS 195C. Audit available.

MUS 195D. Symphonic Band. 1 Credit.
Provides the opportunity to participate in a conducted symphonic band for brass, woodwind and percussion instrumentalists. Includes rehearsal and performance of repertoire from the 17th-21st centuries. Prerequisite: MUS 195D. Audit available.

MUS 195E. Symphonic Band. 1 Credit.
Provides the opportunity to participate in a conducted symphonic band for brass, woodwind and percussion instrumentalists. Includes rehearsal and performance of repertoire from the 17th-21st centuries. Prerequisite: MUS 195E. Audit available.

MUS 201. Introduction to Music and Its Literature. 3 Credits.
Covers music of the Medieval, Renaissance and Baroque eras of music history. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 202. Introduction to Music and Its Literature. 3 Credits.
Covers music of the Classic and Romantic eras of music history. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 203. Introduction to Music and Its Literature. 3 Credits.
Covers music of the post-Romantic era and the 20th century. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 204. Music of the Western World. 4 Credits.
Designed primarily for music transfer students and those with the ability to read music. Provides a survey of the music of the western world. Major periods, forms, styles, and music scores from the ancient period through the contemporary music of our time will be covered. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 205. Introduction to Jazz History. 3 Credits.
Covers the 90-year history of jazz, a truly American art form. Examines and analyzes eras, styles, and significant artists. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 206. Introduction to the History of Rock Music. 3 Credits.
Introduces the history of rock music. 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. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
MUS 207. Introduction to the History of Folk Music. 3 Credits.
Provides the historical development and the musical and textural characteristics of American folk music, from its Anglo-Celtic, Hispanic, African and Native American roots to the present, including country music, bluegrass, blues, border music, religious and other ethnic music. Discusses Folk revivals and the significance of songs in terms of the social norms of the time, including the interaction of folk music with popular music. Presented using a multimedia format. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AATC, Arts and Letters/AATG, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

MUS 208. African-American Music. 3 Credits.
Traces the spiritual and all of its counter-parts to gospel music back to its African beginnings. Includes certain musical aspects of various African, Caribbean and South American cultures. See how African-American music is related to these cultures and how the inception of music in the African-American tradition occurred. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 209. African-American Music. 3 Credits.
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 evolved and constructed the format of modern music. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 210. African-American Music. 3 Credits.
Examines present-day jazz art-form through its progression from the blues. Study the construction of jazz and its various formats, appreciate of the art-form through direct exposure to the music, receive historical background and examine its contribution to the international field of music. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 211A. Music Theory II. 3 Credits.
Continues work on skills from in Music Theory I adding compositional techniques associated with the 20th century, as well as introducing tonal counterpoint and formal musical analysis. Prerequisite: MUS 113. Audit available.

MUS 211B. Music Theory II: Keyboard Harmony. 1 Credit.
Piano keyboard performance of simple keyboard skills (scales, cadences, melody harmonization, simple accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Corequisite: MUS 211A. Audit available.

MUS 212A. Music Theory II. 3 Credits.
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 211B. Audit available.

MUS 212B. Music Theory II: Keyboard Harmony. 1 Credit.
Continues development of piano keyboard skills (scales, cadences, melody harmonization, simple accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Prerequisite: MUS 211B. Corequisite: MUS 212A. Audit available.

MUS 213A. Music Theory II. 3 Credits.
Continues to work on skills from Music Theory I adding compositional techniques associated with the 20th century. Includes tonal counterpoint and formal musical analysis. Prerequisite: MUS 212A. Audit available.

MUS 213B. Music Theory II: Keyboard Harmony. 1 Credit.
Continues development of piano keyboard skills (scales, cadences, melody harmonization, simple accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Prerequisite: MUS 212B. Corequisite: MUS 213. Audit available.

MUS 214. Music of Broadway. 3 Credits.
A historical overview of the music of Broadway. Also includes musical elements and aural skill development. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 220A. Chorus. 1 Credit.
Provides the opportunity to sing in a large general chorus of mixed voices. Includes rehearsal and performance of repertory drawn from the canon of choral works from the 16th-21st centuries. No audition required. Prerequisite: MUS 220A. Audit available.

MUS 220B. Chorus. 1 Credit.
Provides the opportunity to sing in a large general chorus of mixed voices. Includes rehearsal and performance of repertory drawn from the canon of choral works from the 16th-21st centuries. No audition required. Prerequisite: MUS 220B. Audit available.

MUS 220C. Chorus. 1 Credit.
Provides the opportunity to sing in a large general chorus of mixed voices. Includes rehearsal and performance of repertory drawn from the canon of choral works from the 16th-21st centuries. No audition is required. Prerequisite: MUS 220B. Audit available.

MUS 220D. Chorus. 1 Credit.
Provides the opportunity to sing in a large general chorus of mixed voices. Includes rehearsal and performance of repertory drawn from the canon of choral works from the 16th-21st centuries. No audition is required. Prerequisite: MUS 220C. Audit available.

MUS 220E. Chorus. 1 Credit.
Provides the opportunity to sing in a large general chorus of mixed voices. Includes rehearsal and performance of repertory drawn from the canon of choral works from the 16th-21st centuries. No audition is required. Prerequisite: MUS 220D. Audit available.

MUS 220F. Chorus. 1 Credit.
Provides the opportunity to sing in a large general chorus of mixed voices. Includes rehearsal and performance of repertory drawn from the canon of choral works from the 16th-21st centuries. No audition is required. Prerequisite: MUS 220E. Audit available.

MUS 221A. Chamber Chorus. 1 Credit.
Provides the opportunity to sing in a small vocal ensemble. Includes directed rehearsal and performance. Includes possible local, regional and/or off-campus public performances. Audition required. Audit available.

MUS 221B. Chamber Chorus. 1 Credit.
Provides the opportunity to sing in a small vocal ensemble. Includes directed rehearsal and performance. Includes possible local, regional and/or other off-campus public performances. Audition required. Prerequisite: MUS 221A. Audit available.

MUS 221C. Chamber Chorus. 1 Credit.
Provides the opportunity to sing in a small vocal ensemble. Includes directed rehearsal and performance. Includes possible local, regional and/or other off-campus public performances. Audition required. Prerequisite: MUS 221B. Audit available.

MUS 221D. Chamber Chorus. 1 Credit.
Provides the opportunity to sing in a small vocal ensemble. Includes directed rehearsal and performance. Includes possible local, regional and/or other off-campus public performances. Audition required. Prerequisite: MUS 221C. Audit available.

MUS 221E. Chamber Chorus. 1 Credit.
Provides the opportunity to sing in a small vocal ensemble. Includes directed rehearsal and performance. Includes possible local, regional and/or other off-campus public performances. Audition required. Prerequisite: MUS 221D. Audit available.

MUS 221F. Chamber Chorus. 1 Credit.
Provides the opportunity to sing in a small vocal ensemble. Includes directed rehearsal and performance. Includes possible local, regional and/or other off-campus public performances. Audition required. Prerequisite: MUS 221E. Audit available.

MUS 226. Introduction to the Music of Latin America. 4 Credits.
Introduces the music of Latin America through a historical and cultural survey of the region. Covers pre-Columbian practices and the introduction of European traditions, later syncretic genres and contemporary artists. Traces Native, European, African, Asian and Middle-Eastern influences. Includes the examination of instruments and musical practices of the region. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 240. Music Composition. 2 Credits.
Introduces music composition with focus on 20th and 21st century compositional techniques and materials. Includes composition of chamber and concert works using topics and methods covered with the goal of compiling a portfolio of original works. Specific topics covered will vary by term. Course may be taken up to three times for credit. Prerequisite: MUS 111. Audit available.

MUS 240A. Music Composition. 2 Credits.
Introduces music composition with focus on 20th and 21st century compositional techniques and materials. Includes composition of chamber and concert works with the goal of compiling a portfolio of original works. Prerequisite: MUS 111. Audit available.
MUS 240B. Music Composition. 2 Credits.
Covers music composition with focus on 20th and 21st century compositional techniques and materials. Includes composition of chamber and concert works with the goal of compiling a portfolio of original works. Prerequisite: MUS 240A. Audit available.

MUS 240C. Music Composition. 2 Credits.
Covers music composition with focus on 20th and 21st century compositional techniques and materials. Includes composition of chamber and concert works with the goal of compiling a portfolio of original works. Prerequisite: MUS 240B. Audit available.

NURSING

NRS 110. Foundations of Nursing Health Promotion, 9 Credits.
This course introduces the learner to the framework of the OCNE curriculum. The emphasis on health promotion across the life span includes learning about self-health as well as client health practices. To support self and client health practices, students learn to access research evidence about healthy lifestyle patterns and risk factors for disease/illness, apply growth and development theory, interview clients in a culturally sensitive manner, work as members of a multidisciplinary team giving and receiving feedback about performance, and use reflective thinking about their practice as nurses studying populations of clients. Clinical experiences may include children, adults, older adults and the family experiencing a normal pregnancy. Includes classroom and clinical learning experiences. The clinical portion of the course includes practice with therapeutic communication skills and selected core nursing skills identified in the OCNE Core Nursing Skills document. Prerequisite: Admission to the Nursing Program.

NRS 111. Foundations of Nursing in Chronic Illness I, 6 Credits.
This course introduces assessment and common interventions (including technical procedures) for clients with chronic illnesses common across the life span in major ethnic groups. 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 explored 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. Corequisite: NRS 230 and NRS 232.

NRS 112. Foundations of Nursing in Acute Care I, 6 Credits.
This course introduces the learner to assessment and common interventions (including relevant technical procedures) for care of clients 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. Corequisite: NRS 231 and NRS 233.

NRS 221. Chronic Ill I. 9 Credits.
This course builds on foundations of nursing in Chronic Illness I. Chronic Illness I expands the student’s knowledge related to family care giving, symptom management and end of life concepts. These concepts are a major focus and basis for nursing interventions with patients and families. Ethical issues related to advocacy, self determination, and autonomy are explored. Complex skills associated with the assessment and management of concurrent illnesses and conditions are developed within the context of client and family preferences and needs. Skills related to enhancing communication and collaboration as a member of an interdisciplinary team are further explored. Exemplars include patients with chronic mental illness and addictions as well as other chronic conditions and disabilities affecting the course inclusion status and family resources. The course includes classroom and clinical learning experiences. Prerequisite: Completion of first year Nursing courses.

NRS 222. Acute Care II. 9 Credits.
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 Credits.
This course is designed to operationalize the clinical judgments, knowledge and skills necessary in safe, registered nurse practice. Faculty/ Clinical Teaching Associate/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 Credits.
This course introduces the theoretical background that enables students to provide safe and effective care related to drugs and natural products to persons throughout the lifespan. It includes the foundational concepts of principles of pharmacology, nonopiod analgesics, and antibiotics, as well as additional classes of drugs. Students will learn to make selected clinical decisions in the context of nursing regarding using current, reliable sources of information, understanding of pharmacology information, selecting and interpreting focused nursing assessments based on knowledge of pathophysiologic processes, teaching patients 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 Credits.
This sequel to Clinical Pharmacology I continues to provide the theoretical background that enables students to provide safe and effective nursing care related to drugs and natural products to persons throughout the lifespan. Students will learn to make selected clinical decisions in the context of nursing regarding using current, reliable sources of information, monitoring and evaluating the effectiveness of drug therapy, teaching persons from diverse populations regarding safe and effective use of drugs and natural products, intervening to increase therapeutic benefits and reduce potential negative effects, and communicating appropriately with other health professionals regarding drug therapy. The course addresses additional classes of drugs and related natural products not contained in Clinical Pharmacology I. Prerequisites: NRS 111, NRS 230 and NRS 232. Corequisites: NRS 112 and NRS 233.

NRS 232. Pathophysiological Processes I. 3 Credits.
This course introduces pathophysiological processes that contribute to many different disease states across the lifespan and human responses to those processes. It includes the foundational concepts of cellular adaption, injury, and death; inflammation and tissue healing; fluid and electrolyte imbalances; and physiologic response to stressors and pain, as well as additional pathophysiological processes. Students will learn to make selective clinical decisions in the context of nursing regarding using current, reliable sources of pathophysiology information, selecting and interpreting focused nursing assessments based on knowledge of pathophysiologic processes, teaching persons from diverse populations regarding pathophysiologic processes, and communicating with other health professionals regarding pathophysiologic processes. Prerequisite: NRS 110. Corequisite: NRS 111 and NRS 230.

NRS 233. Pathophysiological Processes II. 3 Credits.
This sequel to Pathophysiologic Processes I continues to explore pathophysiologic 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 pathophysiologic processes, teaching persons from diverse populations regarding pathophysiologic processes, and communicating with other health professionals regarding pathophysiologic processes. The course addresses additional pathophysiological processes not contained in Pathophysiological Processes I. Prerequisite: NRS 111, NRS 230 and NRS 232. Co-requisite: NRS 112 and NRS 231.

OCCUPATIONAL SKILLS TRAINING

OST 09. On-the-Job Evaluation. 0 Credits.
Evaluates work traits, aptitudes, limitations, potentials and habits in an actual work environment, with specific focus on a particular occupation or industry. Instructor permission required.
COURSE DESCRIPTIONS

OST 101. Occupational Skills Training 101. 1-16 Credit.
Provides the opportunity for students to receive instruction in a specific occupational area not normally addressed by on-going PCC programs. An individualized course in consultation with the student, PCC faculty, PCC OST coordinators, work-site supervisors, and agency representative(s), if appropriate. An interview with an OST coordinator is required for assessment, to determine the specific occupation and to approve a suitable training site and its availability. Prerequisites are determined by the specific occupational standards.

OFFICE SYSTEMS
OS 131. 10-key on Calculators. 1 Credit.
Develops 10-key skills by touch. Recommended: Placement into RD 115, WR 115, and MTH 20. Audit available.

OS 220. Business Editing Skills. 4 Credits.
Develops skills necessary for editing, transcription, and writing memos, letters and email. Emphasis: punctuation, capitalization, spelling, grammar, and word usage. Recommended: Placement into WR 121, keyboard by touch. Audit available.

OS 240. Filing and Records Management. 4 Credits.
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 magnetic records. Recommended: RD 115, WR 115, and CAS 133 or CAS 140. Audit available.

OS 245. Office Systems and Procedures. 4 Credits.
Develops the skills of an administrative professional for current business practices. Uses computer technology for tasks such as scheduling, email, and faxing. Develops communication, organization and prioritizing skills, telephone techniques, problem solving, and analytical abilities. Analyzes current trends in workplace ethics and the multi-cultural workplace. Develops workplace readiness and applies job search skills for current job market. Prerequisites: CAS 216 and OS 220. Audit available.

OS 250. Creating a Virtual Office. 4 Credits.
Covers all aspects of creating an office for a virtual assistant. Includes developing an individual business plan, analyzing office needs for furniture and equipment, creating a marketing plan incorporating a social media marketing strategy, establishing a fee rate range, identifying software requirements, planning a company website, and creating a file management system. Recommended: CAS 246. Audit available.

OS 251. Virtual Office Concepts. 4 Credits.
Introduces the concepts and skills needed to become a successful virtual assistant. Covers time management, business relationships, telephone techniques, telecommuting, ethics, conflicts, stress management, separating home and office life, networking with other virtual assistants, virtual assistant associations, conducting virtual meetings, legal requirements, insurance issues, negotiating contracts, and creating business webpage and electronic portfolio. Prerequisite: OS 250 or instructor permission. Recommended: CAS 111D. Audit available.

OS 280F. Cooperative Education: Administrative Assistant. 1-5 Credit.
Provides field experience for the administrative assistant. Recommended: RD 115, WR 115 and satisfactory progress through at least 15 credit hours of CAS OS courses, or instructor permission required.

OPHTHALMIC MEDICAL TECHNOLOGY
OMT 102. Ocular Disease. 2 Credits.
Studies major ocular diseases and related structures integrated with symptomatology and treatment. Introduction of ophthalmic drugs. Audit available.

OMT 103. Ocular Pharmacology. 2 Credits.
Details major classifications of ophthalmic drugs, mechanisms of action, side effects, first aid techniques for acute ophthalmic drug reactions. Explores the relationship of ocular pathology and medications used to treat. Audit available.

OMT 104. Ophthalmic Office Procedures. 3 Credits.
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 Credits.
Covers basic test principles and techniques including FDT, tangent screen and Goldmann visual fields, noncontact, TonoPen andplanation tonometry, slit lamp examination, anterior chamber depth assessment, lensometry, keratometry, refractometry and retinoscopy.

OMT 115. Introduction to Ophthalmics. 2 Credits.
Introduces ophthalmology including history, roles and responsibilities of ophthalmic technicians and other allied health personnel in ophthalmology, industry standards and professional organizations. Discusses ethics of patient care, confidentiality, privacy, scope of practice and employment opportunities. Covers office efficiency, professionalism and risk management. Prerequisite: MTH 65, WR 121, and MP 111.

OMT 121. Practicum I. 1-4 Credit.
Discusses practicum experiences, reviews concepts of medical ethics, patient confidentiality, professionalism and communication skills. Includes blood borne pathogen training. Corequisite: OMT 231.

OMT 122. Practicum II. 5 Credits.
Develops proficiency in the use and care of ophthalmic equipment, basic screening techniques, obtaining pertinent patient ocular/medical history, diagnostic and examination procedures, medication (pharmacology and administration) and handling of patients in an ophthalmic practice. Prerequisites: OMT 121, HE 113.

OMT 145. Clinical Optics 1. 2 Credits.
Provides the opportunity for students to receive instruction in a specific occupational area not normally addressed by on-going PCC programs. An individualized course in consultation with the student, PCC faculty, PCC OST coordinators, work-site supervisors, and agency representative(s), if appropriate. An interview with an OST coordinator is required for assessment, to determine the specific occupation and to approve a suitable training site and its availability. Prerequisites are determined by the specific occupational standards.

OMT 206. Diagnostic Procedures I. 4 Credits.
Introduces fundamentals of diagnostic testing and techniques including: applanation tonometry, slit lamp biomicroscopy, Goldmann and automated perimetry, ocular motility and advanced keratometry. Emphases building clinical skills.

OMT 207. Diagnostic Procedures II. 4 Credits.
Introduces principles of retinoscopy, basic lensometry, and prisms as they relate to ocular motility. Continuation of OMT 145 Clinical Optics 1. Prerequisite: OMT 145. Audit available.

OMT 210. Advanced Diagnostics. 4 Credits.
Focuses on more advanced diagnostic procedures including electrrophysiologic tests, direct ophthalmoscopy, advanced color testing, advanced motility, tonometry and retinoscopy. Addresses microscopy, including specimen collection. Provides overall review in preparation for national certification examination. Audit available.

OMT 222. Practicum Second Year. 4 Credits.
Provides clinical education experience in local ophthalmic practices and health care facilities under the supervision of facility personnel. Includes exposure to working conditions and skills needed while performing ophthalmic diagnostic and therapeutic procedures. Students must enroll in this course if they are enrolled in the second year seminar. May be repeated two times for credit. Corequisite: OMT 232.

OMT 231. Seminar I. 2 Credits.
Discussions practicum experiences, reviews concepts of medical ethics, patient confidentiality, professionalism and communication skills. Includes blood borne pathogen training. Corequisite: OMT 121.
PL 101. Introduction to Law - Fundamentals. 3 Credits.
Covers sources and function of law in the United States, court systems and procedure, introductory legal analysis, and an overview of civil and administrative law. Prerequisite: WR 121. Audit available.

PL 102. Introduction to Law - Substantive Areas. 3 Credits.
Continues the study of several substantive areas of law. Prerequisite: PL 101. Audit available.

PL 103. Introduction to Law - Ethics. 3 Credits.
Covers Oregon ethics rules and their practical application for the paralegal. Includes application of rules via systems and procedures used in law practice. Prerequisite: PL 101. Audit available.

PL 104. Investigation Techniques for Paralegals. 3 Credits.
Explores fundamental techniques of legal investigation from the incident scene to the courtroom. Includes ethics, research techniques, investigative strategies, recordkeeping, information sources, witness location, report writing, subpoenas, physical and demonstrative evidence. Prerequisites: PL 101. Audit available.

PL 105. Litigation. 3 Credits.
Covers litigation process with emphasis on civil litigation. Includes a study of tort law principles focusing on the trial process (investigation, discovery and motion practice) emphasizing preparation of documents and pleadings. Prerequisite: PL 101. Audit available.

PL 106. Legal Research and Library Use. 3 Credits.
Covers how and when to use computers for legal research and operational issues, including legal databases, searching strategies, and legal writing. Prerequisite: PL 101. Audit available.

PL 107. Techniques of Interview. 3 Credits.
Covers the paralegal's role in large-budget, deeply staffed litigation in which a range of lawyers and paralegals staff a case. Explores how to manage and track documents, assemble and organize documents to assist lawyers preparing for deposition and trial and manage trial technology. Recommended: PL 201 or PL 203 or LA 203, and WR 122 or WR 227. Audit available.

PL 108. Family Law. 3 Credits.
Covers the paralegal’s role in family law practice. Includes dissolution of marriage, issues of custody, visitation, property and debts, adoption, paternity, domestic violence, and prenuptial and co-habitation agreements. Audit available.

PL 201. Legal Research and Library Use. 3 Credits.
Covers function of the law library and develops research skills through the use of digests, encyclopedias, reporter systems and practice manuals. Prerequisites: PL 101. Audit available.

PL 202. Computer Research in Law. 3 Credits.
Covers computer research and drafting. Prerequisite: PL 101. Audit available.

PL 204. Applied Legal Research and Drafting. 3 Credits.
Covers legal research skills and the drafting of legal pleadings, documents and memoranda common to the practice of law. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 201 or PL 203 or LA 203, and WR 122 or WR 227. Audit available.

PL 205. Advanced Litigation. 3 Credits.
Covers legal research skills and the drafting of legal pleadings, documents and memoranda common to the practice of law. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 101 and PL 105. Audit available.

PL 206. Intellectual Property Law. 3 Credits.
Covers legal research skills and the drafting of legal pleadings, documents and memoranda common to the practice of law. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 101 and PL 105. Audit available.

PL 208. Family Law. 3 Credits.
Covers legal research skills and the drafting of legal pleadings, documents and memoranda common to the practice of law. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 101 and PL 105. Audit available.

PL 211. Probate Practice. 3 Credits.
Covers preparation and filing of necessary papers used to administer an estate under Oregon state law. Audit available.

PL 212. Law Office Management. 3 Credits.
Covers legal office organization and management, personnel management, administration, and automated systems, and other aspects of law office management. Audit available.

PL 213. Legal Correspondence and Forms. 3 Credits.
Covers basic forms of legal writing generally required of a paralegal in a general legal 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. Audit available.

PL 214. Fiduciary Tax and Accounting. 3 Credits.
Covers the paralegal's role in large-budget, deeply staffed litigation in which a range of lawyers and paralegals staff a case. Explores how to manage and track documents, assemble and organize documents to assist lawyers preparing for deposition and trial and manage trial technology. Recommended: PL 101 and PL 109. Audit available.

PL 215. Employee Benefits Programs. 3 Credits.
Covers various types of employee benefits plans. Includes employment at will doctrine, wrongful discharge claims, discrimination based on sex, age, disability, and race. Audit available.

PL 216. Employment Law. 3 Credits.
Covers federal and Oregon income taxation of estates and trusts and other aspects of the practice of law. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 101. Audit available.

PL 217. Real Property Law II. 3 Credits.
Covers key real estate transactions documents and concepts, including leases, cadastral and other types of property ownership, title insurance, condominiums and estate planning. Audit available.

PL 218. Corporate and Consumer Law. 3 Credits.
Covers theories, practical aspects and principles of the practice of law in the field of corporate law. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 101. Audit available.

PL 219. Contract and Consumer Law. 3 Credits.
Covers the paralegal's role in large-budget, deeply staffed litigation in which a range of lawyers and paralegals staff a case. Explores how to manage and track documents, assemble and organize documents to assist lawyers preparing for deposition and trial and manage trial technology. Recommended: PL 101 and PL 105. Audit available.

PL 220. Real Property Law II. 3 Credits.
Covers the paralegal's role in large-budget, deeply staffed litigation in which a range of lawyers and paralegals staff a case. Explores how to manage and track documents, assemble and organize documents to assist lawyers preparing for deposition and trial and manage trial technology. Recommended: PL 101 and PL 105. Audit available.

PL 221. Immigration Law for Paralegals. 3 Credits.
Provides an overview of immigration law and explores issues related to the immigration process. Includes preparation of a portfolio of student work completed in the paralegal program. Prerequisite: PL 101. Audit available.

PL 222. Seminar II. 2 Credits.
Reviews major professional subject areas through guest speakers and field trips. Discusses practicum experiences and employment opportunities. Students must enroll in this class if they are enrolled in second year Practicum. May be repeated two times for credit. Corequisites: OMT 222.
PL 220. Worker’s Compensation. 3 Credits.
Covers principles and procedures that exist in the Oregon’s worker’s compensation system. Familiarization with a general understanding of the rules and concepts that control the right to compensation in the system as well as the procedural skills. Audit available.

PL 221. Bankruptcy Law. 3 Credits.
Covers Bankruptcy Code, Rules of Procedure, types of bankruptcy relief, exempt and non-exempt property, dischargeability of debts, and bankruptcy forms. Audit available.

PL 222. Corporate Law Practice. 3 Credits.
Covers most significant state corporate law, how to assist in preparation and filing of documents necessary to form a corporation, how to draft resolutions for corporate shareholders and directors’ meetings, and how to pay dividends to shareholders or to terminate business and distribute property. Audit available.

PL 224. Torts and Personal Injury. 3 Credits.
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, analysis of fact situations, review of case law, draft pleadings, evaluation of damages, discovery issues, and application of principles discussed in class. Prerequisite/concurrent: PL 101. Audit available.

PL 225. Advanced Law Office Management. 3 Credits.
Examines practical solutions to law office management problems through application of theory and concepts discussed using a case study approach. Audit available.

PL 226. Criminal Law for Paralegal. 3 Credits.
Covers general criminal law and procedure to gain a basic understanding of the criminal justice system as well as the Paralegal’s role in the criminal justice system. Audit available.

PL 230. E-Discovery. 3 Credits.
Introduces and covers E-Discovery, the E-Discovery Reference Model (“EDRM”) and the software used in law firms for document review. Covers current trends in the Federal Rules of Civil Procedure, social media and cloud computing discovery issues and the practical application of these rules. PC and Mac formats will be covered. Prerequisites: PL 105 and PL 130. Audit available.

PL 280A. Cooperative Education: Paralegal. 1-3 Credit.
Students work at approved job sites to receive as varied and complete a job experience as possible under job conditions. Designed to meet the needs of the individual student and the conditions of the work site. Goals for each student are established by written Learning Objectives between the student and work site, approved by the Instructor or program. Department approval and completion of 18 credits hours in Paralegal Program (unless waived by the Department) are required. Audit available.

PHILOSOPHY

PHL 185. Computer Ethics. 3 Credits.
Addresses the ethical and social issues that arise around the use of computer technology. Explores actual and potential applications of computer technology and our ethical Responsibilities when deciding how to best use it. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PHL 191. Analysis & Evaluation of Argument. 4 Credits.
Analyzing arguments, recognizing arguments when they occur, discerning simple logical patterns of argument, extracting arguments from the contexts in which they occur, restating them in clear and concise terms and clearing away needless language in formulating arguments. Common reasoning errors involving fallacies are identified and presented with logical alternatives. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 195. Critical Thinking: Science and the Occult. 4 Credits.
Introduces scientific method, assessment criteria for scientific observations and explanations and the difference between genuine and bogus science. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 197. Manufacturing Reality: Critical Thinking and the Media. 4 Credits.
Addresses the growing impact of electronic media on our perceptions of truth and reality. Emphasizes skills to critically deconstruct and analyze the embedded values, messages, and techniques of electronic media as a basis for empowering students to formulate meaningful responses. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 201. Being and Knowing. 4 Credits.
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, and 3.25 GPA. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 201H. Being and Knowing: Honors. 4 Credits.
Honors version of PHL 201. 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, and 3.25 GPA. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 202. Ethics. 4 Credits.
Studies attempts by philosophers to account for the difference between right and wrong, for the notion of moral obligation and to answer the question: How should we lead our lives? Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 202H. Ethics: Honors. 4 Credits.
Honors version of PHL 202. 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, and 3.25 GPA. Audit available. This course fulfills the following GE requirements: Arts and Letters/ AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 204. Philosophy of Religion. 4 Credits.
Examines the existence and attributes of God, faith, reason and mysticism, religion and science, religion and morality, religious language and life after death from the perspective of the philosopher. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 205. Contemporary Moral Problems: Biomedical Ethics. 4 Credits.
Designed primarily for nursing and other health care students. Focuses on applying ethical concepts to the situations and dilemmas nurses and other health care workers confront in their professional roles. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 206. Introduction to Environmental Ethics. 4 Credits.
Investigates the ethical questions that pertain to human choices regarding the environment. Some of the questions addressed include: Do non-human animals have rights? What is the environment and do we have an obligation to protect it? What is the proper ethical balance between economic and environmental concerns regarding natural resources? Does the present generation have an ethical obligation to preserve a healthy environment for future generations? Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 207. Ethical Issues in Aging. 4 Credits.
Applies various ethical principles and critical frameworks to ethical issues and dilemmas that arise in working with older people in a variety of settings. Utilizes an interdisciplinary approach to investigating ethical issues and engaging in well-reasoned ethical discussions regarding matters of aging in order to become more proficient in ethical decision making. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
PHL 208. Political Philosophy, 4 Credits.
Introduces students to and develops critical skills in examination of political theories and concepts through study of the works of major figures in the history of political philosophy from Plato to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AATOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 209. Business Ethics, 4 Credits.
Designed primarily for students of business and related fields. Reviews some historical and contemporary ethical theories and ethical issues that arise in several aspects of business, such as, management, use of computers, marketing, accounting, and doing business in an international setting. Includes the social responsibilities of corporations, the rights of workers, truth in advertising, the environmental impact of doing business, affirmative action in hiring, sexual harassment in the workplace, respect for cultural differences, and the responsibilities of the individual in the corporate setting. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 210. Introduction to Asian Philosophy, 4 Credits.
Introduces the non-dualistic philosophies of India, China, Japan, and South East Asia, which offer a complementary approach to Western traditions in logic, ethics, epistemology, and metaphysics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 211. Existentialism, 4 Credits.
This course will investigate existential philosophy from the 19th Century to the present. Students will become familiar with the different branches of existentialist thought and the influence existentialism had on philosophy, literature, and culture in the 19th and 20th Centuries. Philosophers that will be studied include, but are not limited to, some of the following: Kierkegaard, Nietzsche, Heidegger, Camus and Sartre. Prerequisite: Placement into WR 121 and placement into RD 90 Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 212. Introduction to Philosophy of Mind, 4 Credits.
Introduces historical and contemporary thought in the philosophy of mind, considering traditional philosophical questions about the nature of the human person in the light of recent research in the cognitive sciences. Includes reading pertinent philosophical and related texts, and may involve museum and research facility field trips, the informal replication of experiments demonstrating interesting aspects of conscious experience, and the utilization of pertinent online, film, and other contemporary media accounts. Features texts from the literature of philosophy of mind, such as discussions of brains in vats, zombies, the plight of color-blind neuroscientists, and what it’s like to be a bat. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AATOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 221. Symbolic Logic, 4 Credits.
Utilizes the constructs and techniques of symbolic logic to illustrate the basis for assessing validity in arguments. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 222. The Philosophy of Art and Beauty, 4 Credits.
Introductory course exploring individual and cultural assumptions about the nature of art and aesthetic expression. Applies a philosophical approach to the study of art forms from many world cultures. In seminar/workshop format, the class involves the study of a variety of media and genres, with possible field trips to museums, galleries gardens, and performing arts events. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AATOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 298. Independent Study: Philosophy, 4 Credits.
Advanced, individualized study in areas of philosophy not considered in other courses to meet special interests or program requirements. Complete a term project and readings approved by the instructor. Recommended: prior study in philosophy and instructor permission. Audit available.

PHYSICAL EDUCATION

PE 10. Physical Education Activity Program. 1 Credit.
Independent study format allowing students to participate in a variety of activities using designated PCC facilities when classes are not scheduled. This class does not count towards PCC degrees or PCC financial aid. Check with appropriate institution or high school for transferability of this class. Consultation with instructor may be required. Recommended: signed physical examination form. Audit available.

PE 120A. Ballet I. 1 Credit.
Introduces fundamentals of Ballet technique with a focus on correct alignment, development of strength, flexibility, range of motion, stability, and Ballet terminology. D 190A and PE 120B cannot both be taken for credit. Audit available.

PE 120B. Ballet I. 1 Credit.
Explores concepts of beginning Ballet with a focus on correct alignment, form, musicality and moving with greater awareness. Provides a foundation for Ballet II. D 190B and PE 120B cannot both be taken for credit. Prerequisites: D 190A or PE 120A. Audit available.

PE 120C. Ballet II. 1 Credit.
Develops Ballet technique at intermediate level with a focus on dynamic alignment, musicality, movement qualities, and functional technique. D 191A and PE 120C cannot both be taken for credit. Prerequisites: D 190B or PE 120B. Audit available.

PE 120D. Ballet II. 1 Credit.
Continues development of Ballet technique at an Intermediate level with a focus on dynamic alignment, musicality, movement qualities, and functional technique. D 191B and PE 120D cannot both be taken for credit. Prerequisites: D 191A or PE 120C. Audit available.

PE 120E. Ballet III. 1 Credit.
Develops Ballet technique at an advanced level with a focus on dynamic alignment, musicality, movement qualities, and functional technique and performance. D 290A and PE 120E cannot both be taken for credit. Prerequisites: D 191B or PE 120D. Audit available.

PE 120F. Ballet III. 1 Credit.
Continues development of Ballet technique at an advanced level with a focus on increasingly complicated choreography and the expression and communication of Ballet in performance. D 290B and PE 120F cannot both be taken for credit. Prerequisites: D 290A or PE 120E. Audit available.

PE 121A. Modern Dance I. 1 Credit.
Develops Modern Dance technique at an Intermediate level with a focus on correct alignment, development of strength, flexibility, range of motion, and stability, and dance specific terminology. D 190A and PE 121A cannot both be taken for credit. Audit available.

PE 121B. Modern Dance I. 1 Credit.
Explores concepts of beginning Modern Dance with a focus on correct alignment, form, musicality and moving with greater awareness. D 130B and PE 121B cannot both be taken for credit. Prerequisites: D 130A or PE 121A. Audit available.

PE 121C. Modern Dance II. 1 Credit.
Develops Modern Dance technique at an Intermediate level with a focus on dynamic alignment, musicality, movement qualities, and functional technique. D 131A and PE 121C cannot both be taken for credit. Prerequisites: D 130B or PE 121B. Audit available.

PE 121D. Modern Dance II. 1 Credit.
Continues development of Modern Dance technique at an Intermediate level with a focus on dynamic alignment, musicality, movement qualities, ensemble work, and functional technique. D 131B and PE 121D cannot both be taken for credit. Prerequisites: D 131A or PE 121C. Audit available.

PE 121E. Modern Dance III. 1 Credit.
Develops Modern Dance technique at an Intermediate/Advanced level with a focus on dynamic alignment, musicality, movement qualities, functional technique, and performance. D 230A and PE 121E cannot both be taken for credit. Prerequisites: D 131B or PE 121D. Audit available.

PE 121F. Modern Dance III. 1 Credit.
Continues development of Modern Dance technique at an Intermediate/Advanced level with a focus on applying techniques and skills to enhance performance. D 230B and PE 121F cannot both be taken for credit. Prerequisites: D 230A or PE 121E. Audit available.
PE 190A. Adaptive Physical Education I. 1 Credit.
Provides exercises that deal with acute or chronic injuries or disabilities to improve fitness, health and overall wellness. Covers knowledge and skills needed to perform safe and proper group and individual fitness exercises. Introduces activities adapted to disabilities to promote and emphasize cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Audit available.

PE 130B. Adapted Physical Education II. 1 Credit.
Covers exercises that deal with acute or chronic injuries or disabilities to improve fitness, health and overall wellness. Continues to develop knowledge and skills needed to perform safe and proper group and individual fitness exercises. Introduces activities adapted to disabilities to promote and emphasize cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Introduces instruction regarding individual exercise programming. Audit available.

PE 130C. Adapted Physical Education III. 1 Credit.
Covers exercises that deal with acute or chronic injuries or disabilities to improve fitness, health and overall wellness. Continues to develop knowledge and skills needed to perform safe and proper group and individual fitness exercises. Introduces activities adapted to disabilities to promote and emphasize cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Audit available.

PE 130D. Adapted Aquatic Physical Education I. 1 Credit.
Provides exercises that deal with acute or chronic injuries to improve fitness, health and overall wellness through structured water exercise. Covers knowledge and skills needed to perform safe and proper group and individual fitness exercises in the water. Introduces water activities to promote and emphasize cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Audit available.

PE 130E. Aquatic Adapted Physical Education II. 1 Credit.
Provides exercises that deal with acute or chronic injuries to improve fitness, health and overall wellness through structured water exercise. Provides additional knowledge and skills needed to perform safe and proper group and individual fitness exercises in the water. Introduces water activities to promote and emphasize cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Audit available.

PE 130F. Aquatic Adapted Physical Education III. 1 Credit.
Covers exercises that deal with acute or chronic injuries or disabilities a physical education class to add to already improving fitness, health and overall wellness through structured water exercise. Continues knowledge and skills needed to perform safe and proper group and individual fitness exercises in the water. Introduces water activities to promote and emphasize cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Audit available.

PE 140A. Boxing I. 1 Credit.
Introduces the basic knowledge of the fundamental techniques used in boxing. Utilizes boxing equipment and focus pads to simulate contact. This is a non-contact class. Boxing gloves and hand wraps are required. Audit available.

PE 141A. Disc Golf. 1 Credit.
Provides Disc Golf instruction in skills, drills and game play. Emphasizes history, etiquette, rules, vocabulary and strategy. Promotes skill related components of physical fitness (agility, balance, coordination, power, speed and reaction time) through the sport. Audit available.

PE 142A. Zumba Fitness I. 1 Credit.
Introduces Zumba Fitness to improve health and overall wellness through structured group exercise. Promotes improvement of cardiorespiratory conditioning, muscle endurance and flexibility. Audit available.

PE 142B. Zumba Fitness II. 1 Credit.
Expands knowledge, application and skills of Zumba Fitness. Continues fundamental techniques learned in Zumba Fitness I. Promotes continued improvement of cardiorespiratory conditioning, muscle endurance, and flexibility through the safe and proper skill of rhythmic exercise. Audit available.

PE 142C. Zumba Fitness Gold. 1 Credit.
Introduces a slower paced Zumba Fitness Class. Incorporates Zumba music at half pace lower impact work. Promotes improved cardiorespiratory conditioning, muscle endurance flexibility and/or body composition. Audit available.
**PE 180C. Advanced Swimming. 1 Credit.** Continues the development of the student's swimming and water safety skills. Stroke refinement, and skill proficiency are stressed. New strokes introduced include the butterfly and underwater swimming. Prerequisite: PE 180B or instructor permission. Audit available.

**PE 180F. Lap Swimming. 1 Credit.** Continued improvement of skilled swimmer's cardiovascular endurance. Explores and develops various training methods to enhance swimming techniques and knowledge of training strategy. Audit available.

**PE 180K. Masters Swimming. 1 Credit.** 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. Audit available.

**PE 180L. Swim Conditioning I. 1 Credit.** 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. Audit available.

**PE 180M. Swim Conditioning II. 1 Credit.** Uses aspects of swim skills to improve cardiovascular endurance, muscular strength/endurance, and flexibility. Includes water/land exercises, lap swimming and water games. Incorporates all of the competitive strokes for improved conditioning. Recommended: Swim Conditioning; Intermediate level swim skills or equivalent. Audit available.

**PE 181A. Beginning Weight Training - Coed. 1 Credit.** 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. Audit available.

**PE 181B. Intermediate Weight Training - Coed. 1 Credit.** 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. Audit available.

**PE 181C. Advanced Weight Training - Coed. 1 Credit.** 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. Audit available.

**PE 181D. Circuit Weight Training - Coed. 1 Credit.** Cardiopulmonary and strength fitness are maintained/improved through the use of multiple weight and aerobic stations, based on a structured time and rotation system. Audit available.

**PE 181E. Circuit Weight Training 2 - Coed. 1 Credit.** Cardiopulmonary and strength fitness are maintained/improved through the use of multiple weight and aerobic stations, based on a structured time and rotation system. Audit available.

**PE 182A. Beginning Group Fitness. 1 Credit.** Promotes fitness, health, and overall wellness through structured group fitness classes. Introduces knowledge and skills needed to perform safe and proper group fitness exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Emphasizes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, and/or body composition. Audit available.

**PE 182B. Intermediate Group Fitness. 1 Credit.** Promotes maintenance or improvement of fitness, health, and overall wellness through structured group fitness classes. Covers knowledge and skills for performing more advanced group fitness exercises safely. The focus of the course and skills learned will vary by campus, term, and/or instructor. Emphasizing improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, body composition, and skill-related fitness (balance, speed, agility, reaction time, coordination). Recommend: Beginning Group Fitness or a recent group exercise class. Audit available.

**PE 182C. Beginning Fitness and Walking. 1 Credit.** Beginning level, self-paced walking program and a variety of conditioning exercises for specific body areas. Provides instruction for integrating walking into a lifetime fitness program. Audit available.

**PE 182D. Intermediate Fitness & Walking. 1 Credit.** Improve fitness through structured exercise and walking program designed to increase the frequency and duration of regular workouts. Incorporate a walking program into a total fitness program for future use. Recommended: Beginning Fitness and Walking or average fitness level. Audit available.

**PE 182E. Jogging for Health. 1 Credit.** Introduces the proper running technique and provides the opportunity to improve overall general fitness. Running will be done on the track until student and instructor feel the student is ready to run on the road. Audit available.

**PE 182F. Boot Camp. 1 Credit.** 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 callisthenic training in a group class format. Audit available.

**PE 182G. Tai Chi I. 1 Credit.** 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. Recommended: PE 182S or instructor approval. Audit available.

**PE 182H. Adult Fitness. 1 Credit.** Exercises and activities which strengthen and condition specific large muscle groups, improve cardiovascular fitness and flexibility. Audit available.

**PE 182I. Power Yoga. 1 Credit.** Covers intermediate and advanced Hatha Yoga poses. Offers exposure to other areas of mind body fitness and an opportunity to study a selected Yoga topic in depth. Student should have prior knowledge and skill base in order to perform the Sun Salute I and II. Audit available.

**PE 182J. Gentle Yoga. 1 Credit.** Introduces techniques to better manage stress. Vinyasa yoga is a dynamic series of poses performed at a gentle pace and helps to reduce stress levels. Recommend for students with limited abilities and beginners who are not ready for Yoga I. Covers basic yoga philosophy, asanas, pranayama, meditation and relaxation for a holistic approach to better health and wellness. Audit available.

**PE 182K. Yoga I. 1 Credit.** 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. Audit available.

**PE 182L. Yoga II. 1 Credit.** Expand knowledge, application and skill in Hatha Yoga. Offers exposure to other areas of health care and an opportunity to study a selected topic in depth. Recommended: prior class in Hatha Yoga. Audit available.

**PE 182P. Body in Balance - Pilates Conditioning. 1 Credit.** Covers basic concepts and skills in the Pilates Method of conditioning, designed to increase core strength and stabilization, muscle balance, tone, coordination, and flexibility. Non-impact mat exercises develop whole body awareness and control, and can be modified to various fitness levels. Audit available.

**PE 182Q. Self-Paced Fitness. 1 Credit.** Provides opportunity to develop regular physical fitness habits for everyday schedule. Faculty assesses student through pre/post fitness testing and required consultations. Due to independent format it is intended for those with a high level of fitness. Requires active email account. Audit available.

**PE 182R. Back Care. 1 Credit.** Explore appropriate exercises, body mechanics, posture, and other techniques for prevention and relief of back pain. Audit available.

**PE 182S. Tai Chi. 1 Credit.** Explore this ancient form of gentle movement which emphasizes balance, concentration and coordination. Learn traditional styles of Tai Chi in an easy to follow format. Gain strength while relieving tension and stress. Audit available.

**PE 182T. Triathlon Training. 1 Credit.** 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 to off campus events. Audit available.

**PE 182U. Pilates II. 1 Credit.** Builds on concepts and skills in the Pilates method of conditioning. Designed to continue to increase core strength and stabilization challenging the body to further its range of motion. Recommended: Pilates I or instructor permission. Audit available.
COURSE DESCRIPTIONS

PE 182V. Sports Fitness. 1 Credit.
Covers cardiorespiratory fitness, functional training, agility, balance, and teamwork through a variety of team sports. Geared towards practicing specific sport related skills and applying learned skills in game/action environment. Audit available.

PE 182W. Physical Activity for Weight Control. 1 Credit.
Introduces an independent and progressive activity program for overweight, sedentary, and/or older students. Recommended for those students who would like help with weight control through activity, and who have their doctor's permission to begin an activity program. Audit available.

PE 182X. Nia Technique. 1 Credit.
Introduces the Nia technique as a mind/body discipline that blends key elements of the martial, dance, and healing arts to provide a safe, exciting, and joyful fitness program. Applies the design and function of The Body's Way to achieve physical, mental, emotional, and spiritual fitness and well-being. Audit available.

PE 182Y. Indoor Cycling. 1 Credit.
Introduces a improved fitness, health, and overall wellness through structured group cycling. Perform safe and proper group exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Promotes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition. Audit available.

PE 183. Beginning Bowling. 1 Credit.
Covers knowledge and skills needed to perform safe and proper bowling. Presents the history of bowling as well as the equipment, terminology and etiquette of the sport. Promotes an appreciation for the game. Emphasizes proper use of all clubs under variable conditions. Focuses on rules, etiquette and course management. Audit available.

PE 183A. Hiking. 1 Credit.
Explores the basics of hiking in the Pacific Northwest. Addresses decision making skills, trip planning, first aid, safety, navigation and environmental concerns. "Leave No Trace" principles & practices. Includes required day hiking trips in order to apply learned skills in a real-time environment. Some experience and above average fitness recommended, but not required. Audit available.

PE 183B. Beginning Skiing - Nordic. 1 Credit.
Designed to teach student who can perform dynamic diagonal stride and skiing techniques to increase power and control in the diagonal stride, turning for speed control and efficiency in skiing and telemark skiing. Addresses terrain changes, weather and snow conditions. Audit available.

PE 183M. Advanced Volkswalking. 1 Credit.
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. Audit available.

PE 183N. Racquet Sports. 1 Credit.
Introduces two court games: pickleball and badminton. Several weeks spent with each game emphasizing rules, equipment, technique and strategy for both singles and doubles play. Most class time spent in game play. Audit available.

PE 183O. Beginning Table Tennis. 1 Credit.
Reviews strokes, strategies, and skills in singles and doubles play. Emphasizes recreational and competitive play. Recommended: Beginning table tennis skills. Audit available.

PE 183P. Intermediate Table Tennis. 1 Credit.
Reviews strokes, strategies, and skills in singles and doubles play. Emphasizes competitive play. Audit available.

PE 183Q. Advanced Table Tennis. 1 Credit.
Reviews strokes, strategies and skills used in singles and doubles play. Prepare for competition necessary to play. Recommended: Beginning, intermediate table tennis or equivalent experience. Audit available.

PE 183R. Beginning Karate I. 1 Credit.
Introduces a working knowledge of the fundamental techniques employed in the art of Karate-Do. Audit available.

PE 183S. Beginning Karate II. 1 Credit.
Progressive continuation of fundamental techniques employed in the art of Karate-Do. Recommended: Beginning Karate I or equivalent. Audit available.

PE 183T. Aikido I. 1 Credit.
Introduces a working knowledge of the fundamental techniques employed in the art of Aikido. Audit available.

PE 183U. Aikido II. 1 Credit.
Progressive continuation of fundamental techniques employed in the art of Aikido. Audit available.

PE 183V. Judo I. 1 Credit.
Introduces a working knowledge of the fundamental techniques employed in the art of Kodolan Judo. Audit available.

PE 183W. Judo II. 1 Credit.
Builds on knowledge and skill areas covered in Judo I. Audit available.

PE 183X. Tae Kwon Do I. 1 Credit.
Introduces a working knowledge of the fundamental techniques employed in the art of Tae Kwon Do. Audit available.

PE 183Y. Tae Kwon Do II. 1 Credit.
Progressive continuation of the fundamental techniques employed in the art of Tae Kwon Do. Audit available.

PE 183Z. Tae Kwon Do III. 1 Credit.
Expands knowledge of Tae Kwon Do techniques beyond the basics while strengthening self-defense skills. Covers skills required for national and international black belt certifications, as well as skills required for Olympic-style sparring referee certification through USA Taekwondo. Develops skill set required to instruct beginning Tae Kwon Do students, including the use of Korean vocabulary and classroom etiquette. Recommend: PE 183Y or instructor approval. Audit available.

PE 184A. Beginning Skiing - Nordic. 1 Credit.
Designed to teach beginning nordic skiers proper skiing technique for groomed tracks and ungroomed snow conditions. Emphasizes speed control, efficient body movement and safety. Basics of winter survival, proper clothing, and trail etiquette are also emphasized. Audit available.

PE 184B. Intermediate Skiing - Nordic. 1 Credit.
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. Audit available.

PE 184C. Advanced Skiing - Nordic. 1 Credit.
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 skiing and telemark skiing. Audit available.

PE 184D. Advanced Table Tennis. 1 Credit.
Introduces two court games: pickleball and badminton. Several weeks spent with each game emphasizing rules, equipment, technique and strategy for both singles and doubles play. Most class time spent in game play. Audit available.

PE 184E. Intermediate Table Tennis. 1 Credit.
Reviews strokes, strategies, and skills in singles and doubles play. Emphasizes competitive play. Audit available.

PORTLAND COMMUNITY COLLEGE ■ 2014-2015
PE 184D. Beginning Skiing - Alpine. 1 Credit.
Designed to teach inexperienced skiers to link turns together with control on beginning and beginning/intermediate terrain. Introduces the fun of downhill skiing and emphasizes skills necessary to ski safely on appropriate terrain. Addresses the variables of weather and snow conditions. Audit available.

PE 184E. Intermediate Skiing - Alpine. 1 Credit.
Opportunity for continued improvement in safe, enjoyable skiing for students capable of beginning wedge chutes. Includes skidded parallel turns of varying radii with control on intermediate and beginning/advanced terrain. Addresses variables of weather, snow conditions, and terrain. Recommended: Beginning Alpine class or equivalent. Audit available.

PE 184F. Advanced Skiing - Alpine. 1 Credit.
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. Audit available.

PE 184I. Beginning Snowboarding Skiing. 1 Credit.
Basic skills necessary for safe and fun snowboarding on appropriate terrain will be taught. Also skidded turns with control on beginning and beginning/intermediate terrain. The variables of weather and snow conditions will be addressed. Audit available.

PE 184J. Intermediate Snowboarding Skiing. 1 Credit.
Continues refinement of basic skills. Students will be taught to link beginning carved turns with rhythm and control on intermediate and beginning advanced terrain. Stress safe boarding with improvement in skill applications. The variables of weather and snow conditions will be addressed. Recommended: Beginning Snowboarding class or equivalent. Audit available.

PE 184K. Alpine Ski Instructor Training. 1 Credit.
Develops skills needed to teach alpine skiing. American Teaching System progression will be taught from first day through open parallel turns. Skills concept, demonstrations, class safety and handling, movement analysis and limited practice teaching will be covered. Recommended: Advanced Alpine Skiing or equivalent. Audit available.

PE 184L. Advanced Snowboarding Skiing. 1 Credit.
Development of snowboarding skills at higher speeds, varied and difficult terrain. Includes instruction in park riding, freestyle, or powder. Emphasizes safe boarding in challenging conditions. Recommended: Intermediate snowboarding skiing or equivalent. Audit available.

PE 184N. Physical Activity for Weight Control II. 1 Credit.
Continues as an independent and progressive activity program for overweight and/or older students who have taken PE 182W. Covers concepts, activities, and programming that promote weight control through physical activity. Prerequisite: PE 182W. Audit available.

PE 185A. Beginning Basketball. 1 Credit.
Provides instruction in basketball fundamentals, skills, and rules through drills and game play. Audit available.

PE 185B. Intermediate Basketball. 1 Credit.
Provides instruction and opportunity to develop skills and knowledge above the basic level. Implements set plays and skills through drills and game play. Beginning basketball skills required. Audit available.

PE 185C. Advanced Basketball. 1 Credit.
Emphasizes continued development of skills necessary to participate in basketball at an advanced level through game play and drills. Beginning/Intermediate basketball skills required. Audit available.

PE 185D. Beginning Volleyball. 1 Credit.
Includes basic history, terminology, etiquette, strategies and skills of the game. Audit available.

PE 185E. Intermediate Volleyball. 1 Credit.
Emphasizes team play, strategy and individual skills. Included are: batting, running bases and sliding, throwing from outfield, throwing from infield, pitching, catching, fielding and communication. Time is divided between drills and game play. Audit available.

PE 185F. Advanced Soccer. 1 Credit.
Introduces the fundamental principles of Ballroom Dance. Places emphasis on proper partnering, style, and phrasing. Focuses on elementary steps of Foxtrot, Waltz, Swing, Cha-Cha, and Rumba. PE 186D and D 184 are equivalent and only one may be taken for credit. Prerequisite: PE 185M or instructor permission. Audit available.

PE 185H. Advanced Soccer. 1 Credit.
Covers skills and strategies of game. Includes footwork (trapping, feinting, shielding, dribbling), tackling, volley kicking, shooting, heading, goalkeeper play, soccer formations, defense, offense, rules. Beginning and intermediate soccer skills required. Audit available.

PE 185I. Flag Football. 1 Credit.
Covers skills and rules of the game. Emphasizes individual and team offensive, defensive and kicking techniques as well as concepts of team organization and play. Considerable time is spent playing the game. Audit available.

PE 185J. Softball. 1 Credit.
Includes basic history, terminology, etiquette, strategies and skills of the game. May be played on outdoor field or altered for indoor play. Audit available.

PE 185K. Ultimate Frisbee. 1 Credit.
Provides instruction in skills, drills and game play for the game of Ultimate Frisbee. Students will learn the rules, strategy team play as well as concept of team organization. Audit available.

PE 185L. Intermediate Soccer. 1 Credit.
Prerequisite: PE 182W. Audit available.

PE 185M. Advanced Soccer. 1 Credit.
Covers 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. Audit available.

PE 185N. Lacrosse - Intermediate. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Includes basic history, terminology, etiquette, strategies and skills of the game. May be played on outdoor field or altered for indoor play during adverse weather conditions. Audit available.

PE 185O. Advanced Snowboard Skiing. 1 Credit.
Contains an independent and progressive activity program for overweight and/or older students who have taken PE 182W. Covers concepts, activities, and programming that promote weight control through physical activity. Prerequisite: PE 182W. Audit available.

PE 185P. Advanced Snowboarding Skiing. 1 Credit.
Continues as an independent and progressive activity program for overweight and/or older students who have taken PE 182W. Covers concepts, activities, and programming that promote weight control through physical activity. Prerequisite: PE 182W. Audit available.

PE 185Q. Advanced Snowboarding Skiing. 1 Credit.
Beginning/Intermediate in skill or ability for recreational snowboarders with variable terrain. Includes instruction in park riding, freestyle, or powder. Emphasizes safe boarding in challenging conditions. Recommended: Intermediate snowboarding skiing or equivalent. Audit available.

PE 185R. Advanced Snowboarding Skiing. 1 Credit.
Advanced snowboarding skills at higher speeds, varied and difficult terrain. Includes instruction in park riding, freestyle, or powder. Emphasizes safe boarding in challenging conditions. Recommended: Intermediate snowboarding skiing or equivalent. Audit available.

PE 185S. Advanced Snowboarding Skiing. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185T. Advanced Snowboarding Skiing. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185U. Advanced Snowboarding Skiing. 1 Credit.
Beginning snowboarding skills at higher speeds, varied and difficult terrain. Includes instruction in park riding, freestyle, or powder. Emphasizes safe boarding in challenging conditions. Recommended: Intermediate snowboarding skiing or equivalent. Audit available.

PE 185V. Advanced Snowboarding Skiing. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185W. Advanced Snowboarding Skiing. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185X. Advanced Snowboarding Skiing. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185Y. Advanced Snowboarding Skiing. 1 Credit.
Beginning basketball skills required. Audit available.

PE 185Z. Advanced Snowboarding Skiing. 1 Credit.
Beginning basketball skills required. Audit available.

PE 186A. Beginning Snowboarding Skiing. 1 Credit.
Basic skills necessary for safe and fun snowboarding on appropriate terrain will be taught. Also skidded turns with control on beginning and beginning/intermediate terrain. The variables of weather and snow conditions will be addressed. Audit available.

PE 186B. Intermediate Snowboarding Skiing. 1 Credit.
Continues refinement of basic skills. Students will be taught to link beginning carved turns with rhythm and control on intermediate and beginning advanced terrain. Stress safe boarding with improvement in skill applications. The variables of weather and snow conditions will be addressed. Recommended: Beginning Snowboarding class or equivalent. Audit available.

PE 186C. Advanced Snowboarding Skiing. 1 Credit.
Development of snowboarding skills at higher speeds, varied and difficult terrain. Includes instruction in park riding, freestyle, or powder. Emphasizes safe boarding in challenging conditions. Recommended: Intermediate snowboarding skiing or equivalent. Audit available.

PE 186D. Beginning Skiing - Alpine. 1 Credit.
Designed to teach inexperienced skiers to link turns together with control on beginning and beginning/intermediate terrain. Introduces the fun of downhill skiing and emphasizes skills necessary to ski safely on appropriate terrain. Addresses the variables of weather and snow conditions. Audit available.

PE 186E. Intermediate Skiing - Alpine. 1 Credit.
Builds upon the basic principles of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 186F. Advanced Volleyball. 1 Credit.
Builds further on the intermediate techniques of the game. Emphasizes team play, offensive/defensive situations and other advanced skills of spiking, team blocking and shot blocking. Beginning volleyball and intermediate volleyball skills or instructor permission required. Audit available.

PE 186G. Beginning Soccer. 1 Credit.
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. Audit available.
PE 186M. Tap Dance II. 1 Credit.
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. D 175B and PE 186M are equivalent and only one may be taken for credit. Recommended: D 175A or PE 186K or equivalent. Audit available.

PE 186P. Pilates for Dancers. 1 Credit.
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. D 120 and PE 186P are equivalent and only one may be taken for credit. Audit available.

PE 186R. Hip Hop. 1 Credit.
Introduces the fundamental principles and skills of Hip Hop dance. Places emphasis on development of correct technique, strength and flexibility, musicality, and individual expression through movement. Focuses on Hip Hop elements, culture, and terminology. D 177 and PE 186R are equivalent and only one may be taken for credit. Audit available.

PE 186S. Hip Hop II. 1 Credit.
Continue the development of Hip Hop dance at an intermediate level with a focus on longer, more challenging phrases and performance aspects. Emphasis will be placed on the development of correct technique, strength and flexibility, musicality, and individual expression through movement. D 177B and PE 186S are equivalent and only one may be taken for credit. Prerequisite: D 177 or PE 186R or instructor approval. Audit available.

PE 186Z. Conditioning for Dance. 1 Credit.
Examines somatic practices and conditioning methods as they pertain to dance training. Develops kinesthetic awareness, strength, flexibility, stability and greater efficiency in movement. Focus may vary from term to term. PE 186Z and D 121 are equivalent and only one may be taken for credit. Audit available.

PE 250. Introduction to Outdoor Leadership. 2 Credits.
Explores the field of skills utilized in outdoor leadership and recreation. Provides an overview of the outdoor recreation field; applied decision making skills, group dynamics, trip planning, first aid, navigation and environmental concerns (such as “Leave No Trace” principles and practices) will be addressed. Includes a required backpacking/camping trip in order to apply learned skills in a real-time environment. Some experience in camping and backcountry travels recommended but not required. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PE 281. Professional Activities: Weight Training. 2 Credits.
Provides students with the skills, knowledge, and abilities to describe and safely demonstrate a progression of resistance training exercises for all major muscle groups. Emphasizes identifying and utilizing training principles for enhanced muscular fitness and proper technique on a wide variety of resistance training exercises. Prerequisite: PE 181A, 181B, or 181C, and FT 131 or instructor approval. Audit available.

PE 282A. Professional Activities: Group Fitness. 2 Credits.
Explores fitness instruction and leadership for group fitness classes. Covers components of group fitness classes, styles of group exercise, and teaching methods. Required: Current fitness technology student or instructor permission. Audit available.

PE 282B. Professional Activities: Special Populations. 2 Credits.
Explores fitness instruction and leadership for adult populations. Provides tools and knowledge needed to design fitness training programs for healthy, older adults and groups. Explores the wide range of abilities and needs in individuals within older population groups and provides appropriate exercise program modifications when necessary through observation, participation, and service learning activities. Prerequisite: FT 202 or instructor permission. Audit available.

PE 283. Professional Activities: Mind-Body Disciplines. 2 Credits.
Explores fitness instruction and leadership in selected modalities within the Mind-Body Disciplines. Examines key principles of the Mind-Body Disciplines and integrates them into a conventional exercise setting. Required: Current Fitness Technology Student or instructor approval. Audit available.

PE 287. Professional Activities: Aquatics. 2 Credits.
Explores fitness instruction and leadership in the field of aquatics. Incorporates principles of hydrodynamics and exercise to achieve total fitness. Required: Current Fitness Technology Student or instructor approval. Audit available.
COURSE DESCRIPTIONS

PHY 201. General Physics. 4 Credits.
Introductory (physics algebra based) for science majors, pre-medical, pre-
dental, pre-chiropractic and pre-physical therapy students. Topics include
mechanics including statics, forces and motion energy, collisions, circular
motion and rotational dynamics. Prerequisite or concurrent: MTH 111 and its
prerequisite requirements. Audit available. This course fulfills the following
GE requirements: Science, Math, Computer Science/AAS, Science, Math,
Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math,
Computer Science/ASOT-B, Science, Math, Computer Science/AAOT.

PHY 202. General Physics. 4 Credits.
Topics include mechanical properties of matter, heat, waves, sound and light.
Algebra-based physics. Prerequisite: PHY 201 and its required prerequisites.
Audit available. This course fulfills the following GE requirements: Science,
Math, Computer Science/AAOT, Science, Math, Computer Science/ASOT-B,
Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS,
Science, Math, Computer Science/ASOT-B.

PHY 203. General Physics. 4 Credits.
Topics include electricity, magnetism and radioactivity. Algebra-based physics.
Prerequisite: PHY 201 and its prerequisite requirements. Audit available.
This course fulfills the following GE requirements: Science, Math, Computer
Science/AGS, Science, Math, Computer Science/ASOT-B, Science, Math,
Computer Science/ASOT-B.

PHY 211. General Physics (Calculus). 5 Credits.
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. This course fulfills the following GE requirements: Science, Math,
Computer Science/AAOT, Science, Math, Computer Science/AS, Science,
Computer Science/AGS, Science, Math, Computer Science/ASOT-B, Science,
Math, Computer Science/ASOT-B, Science, Math, Computer Science/ASOT-B.

PHY 212. General Physics (Calculus). 5 Credits.
Topics include concepts in fluid mechanics, waves, thermodynamics and optics.
Prerequisites: PHY 211 and its prerequisite requirements. Audit available.
This course fulfills the following GE requirements: Science, Math,
Computer Science/AAOT, Science, Math, Computer Science/AS, Science,
Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

PHY 213. General Physics (Calculus). 5 Credits.
Topics include concepts in electromagnetism together with their relationship to
practical applications. Prerequisites: PHY 211 and its prerequisite requirements.
Audit available. This course fulfills the following GE requirements: Science,
Math, Computer Science/AAOT, Science, Math, Computer Science/AS,
Science, Math, Computer Science/AGS, Science, Math, Computer Science/
Computer Science/ASOT-B.

POLITICAL SCIENCE

PS 106. Citizenship & Engagement: Problems in U.S. Politics. 4 Credits.
Introduces problems in U.S. politics including issues relating to citizenship and
temporary topics. Policy topics are selected to represent the diverse perspectives
as it provides background information current and prospective
U.S. citizens will find helpful to the successful completion of a wide range of
future courses in Political Science. Prerequisite: WR 115 and RD 115 or
equivalent placement test scores. Audit available.

PS 111. Skills and Issues. 1 Credit.
Designed to deepen understanding of PS 201 or PS 202. Includes interactive
tutorials, student skills building exercises, and community-based projects.
Prerequisite: PS 201 or PS 202. Audit available.

PS 201. U.S. Government. 4 Credits.
Examines the development of constitutional traditions in the United States.
Includes topics such as the Bill of Rights, interest groups, parties, and elections,
as well as the national institutions including the Legislative, Executive and
Judicial branches of government. Prerequisites: WR 115, RD 115 and MTH
20 or equivalent placement test scores. Audit available. This course fulfills the
following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social
Sciences/AGS, Social Sciences/ASOT-B, Social Sciences/AAOT, Social Sciences/AS,
Social Sciences/AGS, Social Sciences/ASOT-B.

PS 202. U.S. Public Policy & Democracy. 4 Credits.
Examines the public administration point of view on issues relating to US
national bureaucratic institutions. Covers how these impact a wide range of
domestic policies including taxation, spending priorities, economic regulations,
poverty programs, healthcare, and environmental programs, social security,
and entitlements. Prerequisite: PS 201 or equivalent placement test scores.
Audit available. This course fulfills the following GE requirements: Social
Sciences/AAOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

PS 203. State and Local Government. 4 Credits.
Examines state and local government policy formulation and outcomes on
issues ranging from taxation to prisons, and education to environmental
concerns. Focuses on Oregon state and local politics. PS 201, 202, and 203
need not be taken in sequence. Prerequisites: WR 115, RD 115 and MTH 20 or
equivalent placement test scores. Audit available. This course fulfills the
following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social
Sciences/AGS, Social Sciences/ASOT-B.

PS 204. Comparative Political Systems. 4 Credits.
Covers the study of political systems in various countries. Includes such
issues as policy-making, representation/ participation, political culture,
political economy and development and governance. Countries chosen will
represent various political systems including, democracies, totalitarian regimes,
dictatorships, post-communist systems in transition, newly industrializing
and developing countries. Prerequisites: WR 115, RD 115 and MTH 20 or
equivalent placement test scores. Audit available. This course fulfills the following
GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social
Sciences/AGS, Social Sciences/ASOT-B.

PS 205. Global Politics: Conflict & Cooperation. 4 Credits.
Examines the nature of relations among states. Topics include motivating factors
such as nationalism and imperialism, economic rivalry and the quest for
security, questions of national sovereignty and international cooperation, war
and peace, global issues, and the future. Prerequisites: WR 115, RD 115 and
MTH 20 or equivalent placement test scores. Audit available. This course fulfills the
following GE requirements: Cultural Literacy, Social Sciences/AAOT, Social
Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

PS 211. Peace and Conflict. 4 Credits.
Examines the causes and manifestations of violence in actions involving oneself,
society, one’s nation, and the global community. Alternatives to oppressive
behavior, undemocratic institutions, and the violent resolution of conflict
are considered. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent
placement test scores. Audit available. This course fulfills the following GE
requirements: Cultural Literacy, Social Sciences/AAOT, Social Sciences/AS,
Social Sciences/AGS, Social Sciences/ASOT-B.

PS 220. U.S. Foreign Policy. 4 Credits.
Covers historical analytical treatment of select foreign policy themes since World
War I. 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 test scores. Audit available. This course fulfills the
following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social
Sciences/AGS, Social Sciences/ASOT-B.

PS 221. Globalization and International Relations. 4 Credits.
Provides an introductory survey of economic, political, social, and cultural
dimensions of globalization and evaluates their impacts on international
relations. Examines patterns of conflict and cooperation among countries
including the influence of international institutions, NGOs, and global
corporations. Introduces selected issues such as war and peace, global
security, environment, elites and concentration of power, wealth and income
distribution, cultural and ethnic identities and explores possible peaceful
solutions to these global problems. Prerequisites: WR 115, RD 115 and MTH
20 or equivalent placement test scores. PS 221, EC 221 and SOC 221 are
equivalent and only one may be taken for credit. Audit available.

PS 225. Political Ideologies: Idea Systems. 4 Credits.
Covers sources, strengths and weaknesses of contemporary ideologies, and
the conditions which lead to conflict or to cooperation among them. Includes
liberalisms, conservativeness, socialisms, fascisms, and other idea systems.
Prerequisites: WR 115, RD 115 and MTH 20 or equivalent test scores. Audit
available. This course fulfills the following GE requirements: Cultural Literacy,
Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AGS, Social
Sciences/ASOT-B.

PS 241. Modern India and Its Neighbors. 4 Credits.
Introduces the politics and history of India emphasizing economic and other
polices since 1947. Explores India’s relationship to Afghanistan, Pakistan,
Bangladesh, Nepal, Bhutan, Sri Lanka and elsewhere. Examines diverse
development strategies while assessing environmental and other impacts with
local and global implications. Prerequisites: WR 115, RD 115 and MTH 20 or
equivalent placement test scores. Audit available.

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PS 242. Modern China and Its Neighbors. 4 Credits.
Introduces Chinese politics and history emphasizing economic and other policies since 1949. Explores China’s relationship to Tibet, Hong Kong, and Taiwan as well as political and economic systems in Japan, N. and S. Korea, Vietnam, and elsewhere. Examines diverse development strategies while assessing environmental and other impacts with local and global implications. EC 242 and PS 242 are equivalent and only one may be taken for credit. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 280A. Cooperative Education: Political Science. 1-4 Credit.
Extends knowledge of Political Science through work and/or volunteer time spent in settings that provide learning experiences. Department permission required. Audit available.

PS 280B. Cooperative Education: Community Service & Action Seminar. 2 Credits.
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. 1-4 Credit.
Extends knowledge of Peace and Conflict Studies through work and/or volunteer time spent in settings that provide learning experiences. Department permission required. Audit available.

PS 297. Environmental Politics and Policy. 4 Credits.
Introduces the politics of environmental policymaking in the United States. Examines the key factors behind environmental policy conflicts, with an emphasis on themes and patterns that cut across cases. Explores topics such as interest groups, social movements, political culture, public opinion, court decisions, political leadership, media coverage and partisanship. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PS 298. Independent Study: Political Science. 4 Credits.
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. Audit available.

PROFESSIONAL MUSIC

MUC 101. Commercial Music Theory I. 3 Credits.
Covers chord types and scales, and their proper spellings. Practice dictation practice. Includes music copying. Audit available.

MUC 102. Commercial Music Theory II. 3 Credits.
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. Audit available.

MUC 103. Commercial Music Theory III. 3 Credits.
Covers layout, introduction of block chord progression, block chord types, open tunings, and free chord improvisation. Computer notation systems applied. Music transcription. Must have prerequisite or instructor permission. Prerequisite: MUC 102. Audit available.

MUC 120A. Sight Singing and Ear Training I. 1 Credit.
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. Audit available.

MUC 120B. Sight Singing and Ear Training II. 1 Credit.
Develops the ability to use the ear accurately to discern the quality of intervals, rhythms, harmonies and melodies, and to intone rhythms. Musical samples are transcribed by ear to include melody, rhythm, and harmony. Must have prerequisite or instructor permission. Prerequisite: MUC 120A. Audit available.

MUC 120C. Sight Singing and Ear Training III. 1 Credit.
Develops the ability to use the ear accurately to discern the quality of intervals, rhythms, harmonies and melodies, and to intone rhythms. Musical samples are transcribed by ear to include melody, rhythm, and harmony. Must have prerequisite or instructor permission. Prerequisite: MUC 120B. Audit available.

MUC 123. Electronic Media I. 2 Credits.
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. Audit available.

MUC 124. Electronic Media II. 2 Credits.
Covers computer based recording, synthesis and notation for the composer/arranger. Includes fundamentals in MIDI, sequencing, sampling, basic signal processing, and practical production skills using current digital technology. Write original material during labs sessions. Audit available.

MUC 125. Electronic Media III. 2 Credits.
Covers computer based recording, synthesis and notation for the composer/arranger. Includes fundamentals in MIDI, sequencing, sampling, basic signal processing, and practical production skills using current digital technology. Write original material during lab sessions. Must have prerequisite or instructor permission. Audit available.

MUC 126A. Computer Notation and Scoring 1. 1 Credit.
Uses Sibelius, Finale, or other software to generate music notation and charts to transcribe music and to create scores, harmonizations, and orchestrations.

MUC 126B. Computer Notation and Scoring 2. 1 Credit.
Continues skill building, using Sibelius, Finale, or other software to generate music notation and charts in a variety of more advanced applications. Continues developing skills for transcribing music, creating scores, harmonization, and orchestration.

MUC 130A. Rhythm Training I. 1 Credit.
Develops basic skills of rhythmic sight reading. Audit available.

MUC 130B. Rhythm Training II. 1 Credit.
Develops basic skills of rhythmic sight reading. Audit available.

MUC 130C. Rhythm Training III. 1 Credit.
Develops basic skills of rhythmic sight reading. Audit available.

MUC 140A. Group Piano I. 2 Credits.
Introduces the basics of piano technique with correct observance of pitch, clef, meter, phrasing and interpretation in a contemporary style. Audit available.

MUC 140B. Group Piano II. 2 Credits.
Advanced beginner to intermediate instruction for piano. Develops practice skills, sight reading and technical form. Also covers music fundamentals, harmony, notation, improvisation, and stylistic nuances. Audit available.

MUC 143. Group Percussion. 2 Credits.
Uses rhythms from rock, jazz, R&B, funk and Latin music to cover basic techniques of performance on percussion instruments. Audit available.

MUC 144. Contemporary Singing. 2 Credits.
Covers basic technical skills necessary to develop individual ability in solo or ensemble performance. CDA: Additional lab hours may be required. Audit available.

MUC 144B. Contemporary Singing II. 2 Credits.
Covers intermediate technical and artistic skills necessary for solo and ensemble singing performance.

MUC 145A. Group Guitar/Bass I. 2 Credits.
Beginning instruction for guitar and bass. Includes basic chords, strums, patterns and song forms. Audit available.

MUC 145B. Group Guitar/Bass II. 2 Credits.
Advanced beginner to intermediate instruction for guitar and bass. Includes moveable chords, scales, patterns, and song forms. Also, open tuning and slide guitar, basic soloing and accompaniment techniques. CDA: Additional lab hours may be required. Audit available.

MUC 145C. Group Guitar/Bass III. 2 Credits.
Intermediate to advanced intermediate instruction for guitar and bass. Includes chord studies, chord progressions, scales, basic chord substitution. Also, open tuning and slide guitar, soloing and accompaniment techniques. Audit available.

MUC 150A. Keyboard Harmony I. 1 Credit.
Piano keyboard performance of simple keyboard skills introducing scales, cadences, melody harmonization, simple accompaniment patterns and transposition as they apply to principles studied in Commercial Music Theory I. Audit available.

MUC 150B. Keyboard Harmony II. 1 Credit.
Piano keyboard performance of simple keyboard skills introducing scales, cadences, melody harmonization, simple accompaniment patterns and transposition as they apply to principles studied in Commercial Music Theory II. Must have prerequisite or instructor permission. Prerequisite: MUC 150A. Audit available.

MUC 150C. Keyboard Harmony III. 1 Credit.
Piano keyboard performance of simple keyboard skills introducing scales, cadences, melody harmonization, simple accompaniment patterns and transposition as they apply to principles studied in Commercial Music Theory III. Must have prerequisite or instructor permission. Prerequisite: MUC 150B. Audit available.
MUC 152A. Contemporary Arranging: Settings for Originals and Covers I. 3 Credits.
Develops skills in the tonal placement of sound required for orchestration and arrangement for various styles of music and sizes of musical groups. Focuses on individual instruments and the scoring of each section in the jazz idiom. Includes instrumental and vocal transposition, ranges, harmony, voicing, form, counterpoint, styles, introductions, modulations, interludes, endings, harmonic progression and experimental materials. Audit available.

MUC 152B. Contemporary Arranging: Settings for Originals and Covers II. 3 Credits.
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: MUS 152A. Audit available.

MUC 152C. Contemporary Arranging: Settings for Originals Covers III. 3 Credits.
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: MUS 152B. Audit available.

MUC 154A. Band Performance Workshop. 2 Credits.
Involves selection, rehearsals, and performance in a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Develops rehearsal and presentation skills. Audit available.

MUC 154B. Band Performance Workshop. 2 Credits.
Involves selection, rehearsals, and performance in a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Further develops rehearsal and presentation skills. Students are involved with setup and flow of performance. Audit available.

MUC 154C. Band Performance Workshop III. 2 Credits.
Involves selection, rehearsals, and performance in a variety of musical styles, vocal and instrumental. Includes popular, jazz, and R&B. Develops rehearsal and presentation skills. Students are allowed to "front" band and submit original music. Audit available.

MUC 155. Introduction to Improvisation. 2 Credits.
Introduces the beginning improviser to the art of soloing. On the most basic level common staples of the jazz solo are presented and practiced. Simple tunes featuring these staples are used as "vehicles" for soloing. Enrollment open for this class. Audit available.

MUC 155A. Improvisation I. 2 Credits.
Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic rams. Includes harmonic construction of all styles of jazz and ear training. By the end of the sequence, students solo against song form. Audit available.

MUC 155B. Improvisation II. 2 Credits.
Covers how scales and chords are constructed and used, including melodic construction, phrasing, motifs, riffs, substitution chords, voice leading, paraphrase and melodic rams. Includes harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form. Audit available.

MUC 155C. Improvisation III. 2 Credits.
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 rams. Includes harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form. Audit available.

MUC 156. Survey of the Music Industry. 1 Credit.
Provides overview of career options in the music industry. Focuses on making a reasonable and informed choice as to a career in music. Audit available.

MUC 157. Business for the Musician. 1 Credit.
Instructs prospective music-related business owners, such as bands or private teachers, how to initiate, organize and operate a successful small business. Included are promotion, marketing, and record-keeping. Audit available.
PSY 201A. Introduction to Psychology - Part 1. 4 Credits.
Surveys the major concepts, theoretical perspectives, empirical findings, and historical trends in psychological theories, research methods, and critical thinking, including personality, perception, motivation, learning, memory, language, cognition, consciousness, and human development. Emphasizes the understanding of psychological processes that underlie human behavior. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 202A. Introduction to Psychology - Part 2. 2 Credits.
Surveys the major concepts, theoretical perspectives, empirical findings, and historical trends in personality theory, psychological disorders, therapy, emotion, motivation, intelligence, health psychology, and social psychology. Provides an overview of popular trends in psychology, examines the overarching themes of the development of the human mind, behavior, and emotion. Emphasizes the understanding and mastery of psychological constructs applied to students' personal and professional lives. Recommended: PSY 201A or PSY 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 213. Introduction to Behavioral Neuroscience. 4 Credits.
Surveys the role of the brain and nervous system in behavior, psychological functioning, and neurophysiological processes that underlie human development. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 214. Introduction to Personality. 4 Credits.
Surveys the major concepts, theoretical perspectives, empirical findings, and historical trends in personality theory, psychological disorders, and the sociocultural approach which assumes that gender, culture, and ethnicity are essential to understanding behavior, thought, and emotion. Emphasizes the understanding and mastery of psychological constructs applied to students' personal and professional lives. Recommended: PSY 201A or PSY 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 215. Human Development. 4 Credits.
Surveys the major theoretical perspectives and patterns of change and continuity from birth to death in human subjects. Emphasizes biological, cognitive, and emotional development through the lifespan. Examines cultural influences on development. Recommended: PSY 201A or PSY 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 216. Social Psychology. 4 Credits.
Surveys scientific study of how individuals think about, influence, and relate to one another with respect to social beliefs, persuasion, attraction, conformity, obedience, prejudice, aggression, and pro-social behaviors. Emphasizes the understanding and mastery of psychological constructs applied to students' personal and professional lives. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 222. Family & Intimate Relationships. 4 Credits.
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. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.
RAD 102. Radiographic Positioning II. 3 Credits.
Basic positioning techniques used in radiography of the digestive system, urinary system and continuation of the upper and lower extremities. Lab includes peer positioning, film critique, anatomical identification, pathologies and an energized section using phantoms. Department permission required. Prerequisite: RAD 101.

RAD 103. Radiographic Positioning III. 3 Credits.
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 Credits.
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 Credits.
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 Credits.
Covers generators, timers, x-ray tubes, recording devices, physiology of sight, image intensifiers, television camera/monitors, digital radiography, mobile radiography and fluoroscopic equipment, tomography and teleradiography. Department permission required. Prerequisite: RAD 106.

RAD 107C. Principles of Fluoroscopy. 1 Credit.
Covers the state of Oregon fluoroscopy education requirements on operation of the equipment. Designed as an update for physicians or radiographers and to satisfy the Oregon Radiation Protection Services rules for fluoroscopy. Department permission required.

RAD 110. Radiographic Clinic I. 4 Credits.
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 Credits.
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 Credits.
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 110.

RAD 122. Radiation Protection - Biology. 3 Credits.
Introduces biological effects of ionizing radiation and application of principles to minimize the risks of man-made radiation. Examines standards and requirements determined by government guidelines. Department permission required. Prerequisite: RAD 106.

RAD 130. Radiographic Clinic III. 4.5 Credits.
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 120.

RAD 132. Radiographic Image Production. 3 Credits.
Introduces theory and practical application of film/screen systems, sensotmetry, 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 115.

RAD 140. Radiographic Clinic IV. 10 Credits.
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 130.

RAD 203. Applied Radiography Topics. 2 Credits.
Examines legal principles in radiography by looking at a variety of topics related to medical/professional ethics. Discussions will include the code of ethics and bioethical issues in radiography. Also covered will be the attitudes and communication knowledge needed to develop critical thinking skills in patient care. Prerequisite: RAD 140.

RAD 205. Radiographic Positioning V. 3 Credits.
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 Credits.
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 Credits.
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 Credits.
Provides clinical education experience in an affiliated hospital radiology department under the supervision of a registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 140.

RAD 211. Advanced Imaging Modalities. 4 Credits.
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 Credits.
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 130.

RAD 216. Radiography Registry Review. 2 Credits.
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 Credits.

RAD 230. Radiographic Clinic VII. 9 Credits.
Provides clinical education experience in an affiliated hospital radiology department under the supervision of registered radiographer and radiologist. Includes application of equipment manipulation and operation, radiological imaging procedures, radiation protection, medicolegal and ethical protocol, record keeping, and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 220.
COURSE DESCRIPTIONS

RAD 240. Radiographic Clinic VIII. 7 Credits.
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 Credit.
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 Credit.
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 Credit.
Introduces the normal appearance of anatomical structures in multiple planes. Enables student to differentiate between normal anatomical structures and abnormalities. Designed for graduate technologists or senior radiography students. ARRT certification or department permission required.

RAD 254. CT Physics, Equipment and Instrumentation. 2 Credits.
Introduces Computed Tomography theory and application, patient care, CT safety, imaging procedures, data acquisition and processing and the physical principles of image formation. Prerequisite: Department permission required.

RAD 255. CT Procedures, Protocols and Pathology Correlation. 2 Credits.
Emphasizes CT Protocol development, comparison of CT parameters, parameter tradeoffs, normal vs abnormal anatomy visualization and contrast media utilization. Prerequisite: Department permission required.

RAD 285. Imaging for Pathology. 1 Credit.
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 Credits.
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.

REAL ESTATE

RE 100. Introduction to Real Estate. 3 Credits.
Real estate brokerage, appraisal, escrow, and management. Focuses on these aspects of the real estate industry and provides basic information for choosing real estate as a career. Audit available.

RE 101. Real Estate Practices. 3 Credits.
Introduces the real estate business in general, real estate licensing laws, listing agreements, sales agreements, and fair housing. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 102. Real Estate Law. 3 Credits.
Introduces the laws affecting real estate ownership and the transfer of real estate ownership. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 110. Real Estate Agency Law. 2 Credits.
Introduces the Oregon real estate license and administrative rules, Oregon real estate offices, escrow, office manuals, and other topics. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 112. Real Estate Finance. 3 Credits.
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. Audit available.

RE 114. Real Estate Agency Law. 2 Credits.
Topics covered are common law and statutory law aspects of agency. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 116. Real Estate Finance. 3 Credits.
Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 118. Real Estate Brokerage. 2 Credits.
Topics include advertising, financial records, regulatory requirements for real estate offices, escrow, office manuals, and other topics. Satisfies Oregon Real Estate Broker pre-licensing Audit available.

RE 126. Real Estate Contracts. 2 Credits.
Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 130. Real Estate Advanced Practices. 3 Credits.
Satisfies the Oregon Real Estate Agency post-licensure requirement to complete an advanced course related to the practice of real estate prior to their first renewal of their license. Audit available.

RE 140. Real Estate Broker Property Management. 1 Credit.
Topics include Oregon real estate license and administrative rules, Oregon Residential Landlord and Tenant Act, record keeping, and anti-discrimination statutes. Satisfies Oregon Real Estate Broker pre-licensing requirements. Audit available.

RE 210. Real Estate Appraisal-Foundations. 3 Credits.
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. Audit available.

RE 211. Real Estate Appraisal-Single Family Residences. 3 Credits.
Introduces more sophisticated methods and techniques of valuation related to the appraisal of single family residential properties. Satisfies Oregon State Qualifying Education requirements for licensing/certification. Audit available.
RE 212. Real Estate Appraisal - USPAP. 2 Credits.
Focuses on real estate appraisal ethics and behavior and competent performance by appraisers which are set forth in the Uniform Standards of Professional Appraisal Practice. Satisfies Oregon State Qualifying Education requirements for licensing/certification. Audit available.

RE 226. Real Estate Investments - Advanced. 3 Credits.
Introduces more sophisticated and complex real estate finance and investments concepts. Audit available.

RE 241. RE Brokerage Administration and Sales Supervision. 4 Credits.
Management theory, characteristics and functions of successful management organizational formats. Includes corporate, partnerships and proprietorships, management related problems and license types and requirements. Required prior to taking the Oregon Real Estate Broker's exam. Audit available.

RE 250. Real Estate Investments I. 3 Credits.
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. Audit available.

RE 252. Real Estate Property Management. 6 Credits.
Emphasizes functions and responsibilities of managers of real property. Includes applications of contract and agency law, and statutory materials concerning landlord and tenant, anti-discrimination, and fair credit reporting. Satisfies Oregon State property management license pre-licensing requirements. Audit available.

RELIGIOUS STUDIES

R 201. Asian Religions. 4 Credits.
Explores the religions of Asia, including Hinduism, Buddhism, Daoism, Confucianism, and Shinto. Includes readings of sacred texts and scholarly literature. Focuses on the founders and history, myths and doctrines, rituals and traditions, and social and personal ethics for each tradition. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

R 210. World Religions. 4 Credits.
Examines the major religions of the world, including Hinduism, Buddhism, Chinese religions, Christianity, Judaism, and Islam. Attention is given to their founders and history, myths and doctrines, rituals and traditions, and social and personal ethics. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

RUSSIAN

RUS 101. First Year Russian. 4 Credits.
Emphasizes active communication in beginning Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 102. First Year Russian. 4 Credits.
Continues the work of RUS 101. Emphasizes active communication in Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of RUS 101 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 103. First Year Russian. 4 Credits.
Continues the work of RUS 102. Emphasizes active communication in Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of RUS 102 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 11C. First Year Russian Conversation. 1 Credit.
Continues to practice structures and vocabulary presented in RUS 150 in a conversational format. Recommended: Enrolment in RUS 150. Audit available.

RUS 113A. First Year Russian Conversation. 3 Credits.
Reviews structures and vocabulary presented in first year Russian. Special emphasis on conversational skills. Recommended: Completion of RUS 103, 151, or instructor permission. Audit available.

RUS 150. First Year Russian. 6 Credits.
Emphasizes active communication in beginning Russian. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of RUS 150-151 is equivalent to RUS 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 151. First Year Russian. 6 Credits.
Continues the work of RUS 150. Emphasizes active communication in French. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of RUS 150 or instructor permission. Completion of RUS 150-151 is equivalent to RUS 101-102-103. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 201. Second Year Russian. 5 Credits.
Continues the work of first year Russian, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year Russian at college level or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 202. Second Year Russian. 5 Credits.
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 202 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 203. Second Year Russian. 5 Credits.
Continuation of RUS 202. Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of RUS 202 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 211B. Intermediate Russian Conversation. 2 Credits.
Emphasizes conversational skills and listening comprehension at the second-year level. Recommended: Completion of first year Russian at college level or instructor permission. Audit available.

RUS 213A. Intermediate Russian Conversation. 3 Credits.
Emphasizes conversational skills and listening comprehension at the second-year level. Recommended: Completion of RUS 202 or instructor permission. Audit available.

RUS 241. Great Russian Writers. 4 Credits.
Introduction to Russian literature's great writers including Pushkin, Lermontov, Gogol, Dostoevsky, 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. Audit available.

RUS 260B. Russian Culture. 2 Credits.
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, male gender roles, Russian families, the communist past, ethnic conflict, views of the west, and Russia’s self identity. Course conducted in English and all films with English subtitles. Course can be taken out of sequence. Audit available.

RUS 261B. Russian Culture. 2 Credits.
Russian culture through film. Enhances understanding of Russian culture and contemporary society through analysis of cultural and social issues presented in five Russian films. May explore issues including, but not limited to, Russian men, male gender roles, marriage and divorce, friendship, Russian youth, organized crime, poverty and wealth. Course conducted in English and all films with English subtitles. Course can be taken out of sequence. Audit available.

RUS 270A. Readings in Russian. 3 Credits.
Read and discuss accessible works of Russian prose and poetry. Emphasizes skills for reading in Russian. Recommended: Completion of or concurrent enrollment in RUS 203 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

RUS 270B. Readings in Russian. 2 Credits.
Read and discuss accessible works of Russian prose and poetry. Emphasizes skills for reading in Russian. Recommended: Completion of or concurrent enrollment in RUS 203 or instructor permission. Audit available.

SIGN LANGUAGE INTERPRETATION

ITP 111. American Sign Language I. 5 Credits.
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 Credits.
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 to Sign Language Interpretation program and department permission required.

ITP 113. American Sign Language III. 5 Credits.
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 to Sign Language Interpretation program and department permission required.

ITP 120. Fingerspelling I. 2 Credits.
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 Credits.
Continues work of ITP 120. Emphasizes increased fingerspelling skill by incorporation into the context of ASL conversation in depth. Admission to Sign Language Interpretation program required. Prerequisite: ITP 120.

ITP 131. Deaf Culture. 4 Credits.
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. 2 Credits.
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. 4 Credits.
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 to Sign Language Interpretation program and department permission required.

ITP 212. American Sign Language V. 4 Credits.
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 to Sign Language Interpretation program and department permission required.

ITP 230. American Sign Language Linguistics I. 3 Credits.
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. 3 Credits.
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. Prerequisite: ITP 230.

ITP 241. Deaf Culture. 4 Credits.
Analyze and discuss the history and culture of Deaf people; the influence of geography, culture, attitudes, and economics on education, employment, and legislation as they relate to Deaf people. Explores patterns of social change during the twentieth and twenty-first centuries, focusing on issues of power, oppression and privilege with special attention to current social concepts of Deafhood, Deaf gain, and reframing. Prerequisite: Admission into Sign Language Interpretation program or department permission.

ITP 242. Deaf Culture II. 2 Credits.
Continues work of ITP 241. Analyzes and discusses more advanced concepts in cultural, gender, and sociological studies in the Deaf community, including current topics in dual- and multiple-minority perspectives, discussion of the Deaf-Blind experience, advocacy and political action relating to modern Deaf issues. Course is taught in ASL with no interpretation. Prerequisite: Admission into Sign Language Interpretation program and department permission required.

ITP 260. Interpreting Theory I. 3 Credits.
Introduces the profession of sign language interpretation, the role and function of an interpreter, the National Registry of Interpreters for the Deaf Code of Ethics, professionalism, the history of the profession, and the basic theories and practices of interpretation. Admission to Sign Language Interpretation Program or department permission required.

ITP 261. Interpreting Theory II: K-12 Education. 3 Credits.
Explores the role and functions of interpreters in K-12 classroom. Includes roles and responsibilities of interpreters and other members of the educational team, professionalism, expectations of K-12 interpreters, characteristics of deaf learners, theories of language acquisition, legislation, and technology.

ITP 262. Interpreting Theory III. 3 Credits.
Covers special interpreting settings and consumers, including: oral, deaf-blind, minimal language competency, VRS/VRI, religious, performing arts, social service, medical, mental health and legal. Includes preparation for national certification evaluation.

ITP 263. Interpreting Theory IV. 2 Credits.
Covers business practices, marketing, networking, resources at national, state, and local level. Includes development of business plan, portfolio, and other tools for beginning one’s career. Prerequisites: ITP 262.

ITP 265. Interpreting Theory I. 3 Credits.
Introduces the profession of sign language interpretation, the role and function of the interpreter, the Registry of Interpreters for the Deaf Code of Professional Conduct, basics 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 266. Interpreting Theory II. 3 Credits.
Covers special interpreting settings and practices, including: deaf-blind, VRS/ VRI, religious, performing arts, medical, mental health and legal. Outlines qualifications necessary for working in each specific setting. Includes continued discussion of current ethical and professional issues in the field. Prerequisites: ITP 262 or ITP 265.

ITP 267. Interpreting Theory III. 3 Credits.
Explores the role and functions of interpreters in K-12 classrooms. Includes roles and responsibilities of interpreters and other members of the educational team, professionalism, qualifications, expectations of K-12 interpreters, characteristics of deaf learners, theories of language acquisition, legislation, and technology. Includes concepts necessary for preparation for the Educational Interpreter Performance Assessment knowledge examination. Prerequisites: ITP 262 or ITP 265.

ITP 268. Interpreting Theory IV. 2 Credits.
Covers business practices, marketing, networking, and resources at national, state, and local level. Includes development of business plan, portfolio, certification plan, and other tools for beginning one’s career as a professional Sign Language Interpreter. Prerequisites: ITP 261 or ITP 267.

ITP 270. Interpreting Process I. 6 Credits.
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 Credits.
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 Credits.
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. 4 Credits.
Increases simultaneous ASL to English and English to ASL interpreting skills. Focuses on individual areas of needed skill growth. Includes in-and out-of class interpretation practice sessions. Department permission may be required. Prerequisite: ITP 272.

ITP 274. Interpreting Process V. 4 Credits.
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 Credits. Introduces Deaf guest speakers (live or on videotape) to talk about wide range of specialized topics in ASL. Explores wide range of topics incorporating the skill to know about and discuss in ASL. Admision into Sign Language Interpretation Program and department permission required.

ITP 277. Specialized Discourse II. 3 Credits. 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 skills to know about and discuss in ASL. Admission to Sign Language Interpretation Program and department permission required.

ITP 279. Mock Interpreting I. 2 Credits. 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 Credits. 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 Credits. 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 Credits. 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 263 is required.

ITP 285. Deaf Studies Internship. 3 Credits. 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.

SOCIETY

SOC 204. Sociology in Everyday Life. 4 Credits. Introduces the sociological perspective and the scientific study of human social behavior. Focuses on the core concepts, theories, and research on human interactions within social groups and how people are shaped by their social locations (status, roles, race, class, sex, age, etc.) within society's structures, stratification systems, and institutions, and by cultural processes such as socialization and group dynamics. Prerequisite: RD 115 and equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 205. Social Change in Societies. 4 Credits. Explores how societies change by utilizing sociological perspectives to compare and contrast the impacts of changes on individuals and our social institutions (such as the family, economy, politics, education, and religion). Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 206. Social Problems. 4 Credits. Applies the sociological perspective to the study of social problems, including their identification, analyses of causes and consequences, and considerations of possible solutions. Explores topics such as inequality, poverty, crime and delinquency, substance abuse, discrimination, domestic violence, the environment, global stratification, and international conflict. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 211. Peace and Conflict. 4 Credits. Explores causes and manifestations of violence in actions involving oneself, society, one's nation, and the global community. Alternatives to oppressive behavior, underdeveloped institutions, and the violent resolution of conflict are considered. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 213. Diversity in the United States. 4 Credits. Frames social status differences within the context of social structure and culture. Examines how inequalities and privilege play out through social status and are reinforced through both culture and social structure. Includes status such as: race, gender, ethnicity, sexual orientation, age, etc. Includes concepts such as: privilege, social stratification, cultural bias, institutional inequality, and social construction. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 214A. Illumination Project: Tools for Creative Social Activism 1. 4 Credits. Applies the sociological perspective to the study of social problems and possible solutions. Explores topics such as institutional privilege, power and oppression, social identity, cultural assumptions and discrimination. Includes social analysis, group facilitation, social change interventions, creative production and basic acting. This is the first course of a three course sequence. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and instructor permission. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 214B. Illumination Project: Tools for Creative Social Activism 2. 4 Credits. Applies the sociological perspective to the study of social problems and possible solutions. Explores topics such as racism, immigration, xenophobia, institutional privilege and oppression and social activism through classroom and community presentations utilizing interactive theater. Includes social analysis, group facilitation, social change interventions, creative production and basic acting. This is the second course of a three course sequence. Prerequisites: SOC 214A and instructor permission. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 214C. Illumination Project: Tools for Creative Social Activism 3. 4 Credits. Applies the sociological perspective to the study of social problems and possible solutions. Explores institutional oppression and social activism through classroom and community presentations utilizing interactive theater. Includes social analysis, group facilitation, social change interventions, creative production and basic acting. This is the third course of a three course sequence. Prerequisites: SOC 214B and instructor permission. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 215. Social Issues and Movements. 4 Credits. Explores important social issues and movements from around the world. Examines the impact of social changes and actions on individuals and social structures. Focuses on organized social responses and movements to social problems, utilizing a multicultural and critical-thinking approach. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 218. Sociology of Gender. 4 Credits. Focuses on how socialization is affected by gender. Topics include how gender is reflected in culture through values, norms, language, media, power, violence, various theoretical approaches, significant social institutions, social movements and issues. Recommended: SOC 204 or SOC 205 or instructor permission. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AOT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 219. Religion & Culture: Social Dimensions. 3 Credits. Explores the relationship between culture, social structure, and religion, through an interpretative and cross-cultural examination of religious beliefs, practices, and organization. Audit available.
SOC 221. Globalization and International Relations. 4 Credits.
Provides an introduction to economic, political, social, and cultural dimensions of globalization and evaluates their impacts on international relations. Examines patterns of conflict and cooperation among countries including the influence of international institutions, NGOs, and global corporations. Introduces selected issues such as war and peace, global security, environment, elites and concentration of power, wealth and income distribution, cultural and ethnic identities and explores possible peaceable solutions to these global problems. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. PS 221, EC 221 and SOC 221 are equivalent and only one may be taken for credit.

SOC 222. Social Gerontology/Sociology of Aging. 4 Credits.
Explores the diversity of individual and population aging and their consequences for individuals, families, communities and societies, through a life course and social change perspective. Recommend: Introductory sociology course or instructor permission. Prerequisites: WR115, RD115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Critical Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 228. Introduction to Environmental Sociology, 4 Credits.
Examines the relationship between society and the environment, with a focus on how industrialization and our increasing demand for natural resources has significantly impacted the planet’s ability to meet the needs of humanity and other species. Explores the structural and cultural causes and consequences of such topics as production, consumption, population, development, pollution, and environmental justice and how to respond to these issues through policies and actions. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 230. Introduction to Gerontology. 4 Credits.
Introduces current practice, programs, and policies in the field of gerontology. Addresses professional standards of practice and service delivery, as well as advocacy and policy directions, from a person-directed perspective, responsive to social inequalities and cultural diversity. Recommend: Introductory sociology course or instructor permission. Prerequisites: WR115, RD115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 231. Sociology of Health & Aging. 4 Credits.
Introduces age-related health issues in social and cultural context. Includes the social structuring of age, health and illness; demographics and patterns of health and illness of diverse older adults; issues related to medical and healthcare services; health and long-term care policy and programs. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 232. Death and Dying: Culture and Issues. 4 Credits.
Introduces the institution of death in the United States. Includes a broad multicultural, interdisciplinary approach, including sociological, psychological, historical, ethical, cultural, and religious approaches to death, dying, and bereavement across the lifespan. Recommend: SOC 204, 205, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 234. Death: Crosscultural Perspectives. 4 Credits.
An interdisciplinary study of the cross-cultural variations regarding human responses to death and the differing cosmological implications these suggest. Death, a cultural universal, is addressed in its diversity from both anthropological and sociological perspective. The topic of death as experienced by several major regions and cultures of the world is explored including Asia, India, Bali, Middle East, Melanesia and Native Americans; historical trends in Western Europe and the Americas are assessed regarding the evolution of contemporary perspectives on mortality. ATH 234 and SOC 234 cannot both be taken for credit. Recommend: A prior course in Anthropology or Sociology. Audit available.

SOC 280A. Cooperative Education: Sociology, 1-3 Credit.
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 Credits.
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 296. Independent Study: Sociology, 1-3 Credit.
Advanced, individualized study of areas of sociology not considered in other courses to meet special interests or program requirements. Includes a term project and readings approved by the instructor. Instructor permission required. Recommended: prior study of sociology. Audit available.

SPANISH

SPA 101. First Year Spanish - First Term. 4 Credits.
Emphasizes active communication in beginning Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

SPA 102. First Year Spanish - Second Term. 4 Credits.
Continues the work of SPA 101. Emphasizes active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of SPA 101 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

SPA 103. First Year Spanish - Third Term. 4 Credits.
Continues the work of SPA 102. Emphasizes active communication in Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary, and culture. Recommended: Completion of SPA 102 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

SPA 111A. First Year Spanish Conversation, 3 Credits.
Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended. First year Spanish at the college level or instructor permission. Audit available.

SPA 111B. First Year Spanish Conversation, 1 Credit.
Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended. Simultaneous enrollment in SPA 101 or instructor permission. Audit available.

SPA 112B. First Year Spanish Conversation, 2 Credits.
Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended. First year Spanish at the college level or instructor permission. Audit available.

SPA 112C. First Year Spanish Conversation, 1 Credit.
Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended. Simultaneous enrollment in SPA 102 or instructor permission. Audit available.

SPA 113A. First Year Spanish Conversation, 3 Credits.
Practice of structures and vocabulary of first year Spanish in a conversational format. Recommended. First year Spanish at the college level or instructor permission. Audit available.

SPA 113B. First Year Spanish Conversation, 2 Credits.
Continuation of SPA 112B. Recommended. First year Spanish at the college level or instructor permission. Audit available.

SPA 113C. First Year Spanish Conversation, 1 Credit.
Continuation of SPA 112C. Recommended. Simultaneous enrollment in SPA 103 or instructor permission. Audit available.

SPA 150. First Year Spanish, 6 Credits.
Emphasizes active communication in beginning Spanish. Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. For beginners. Completion of SPA 150-151 is equivalent to SPA 101-102-103. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.
SPA 201. Second Year Spanish - First Term. 4 Credits. Continues the work of first year Spanish, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year Spanish at college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

SPA 202. Second Year Spanish - Second Term. 4 Credits. Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of SPA 201 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

SPA 203. Second Year Spanish - Third Term. 4 Credits. Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of SPA 202 or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

SPA 211B. Intermediate Spanish Conversation. 2 Credits. Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in SPA 201 or instructor permission. Audit available.

SPA 211C. Intermediate Spanish Conversation. 1 Credit. Stresses conversational skills at the second year level. Recommended: Completion of or simultaneous enrollment in SPA 201 or instructor permission. Audit available.

SPA 212C. Intermediate Spanish Conversation. 1 Credit. Continuation of SPA 211C. Recommended: Simultaneous enrollment in SPA 202. Completion of SPA 201 or equivalent also recommended. Audit available.

SPA 213A. Intermediate Spanish Conversation. 3 Credits. Continuation of SPA 212. Recommended: Completion of or simultaneous enrollment in SPA 203 or instructor permission. Audit available.

SPA 213C. Intermediate Spanish Conversation. 1 Credit. Continuation of SPA 212C. Recommended: Simultaneous enrollment in SPA 203 or instructor permission. Audit available.

SPA 217. Reading & Writing for Experienced Speakers of Spanish. 3 Credits. 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. Audit available.

SPA 218. Reading & Writing for Experienced Speakers of Spanish. 3 Credits. 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. Audit available.

SPA 219. Reading & Writing for Experienced Speakers of Spanish. 3 Credits. Part of a three-course sequence to be taken in any order. Improve experienced speaker of Spanish skill in spelling, grammar, reading, composition and translation. Recommended: Experienced speaker of Spanish who can read and write. Audit available.

SPA 250. Second Year Spanish. 6 Credits. Continues the work of first year Spanish, reviewing, expanding, and perfecting pronunciation, structure, and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of first year Spanish at college level or instructor permission. Completion of SPA 250-251 is equivalent to SPA 201-202-203. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

SPA 251. Second Year Spanish. 6 Credits. Continues to expand structure and vocabulary for the purpose of active communication. Includes practice in reading and writing. Recommended: Completion of SPA 250 or instructor permission. Completion of SPA 250-251 is equivalent to SPA 201-202-203. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

SPA 260A. Hispanic Culture. 3 Credits. Introduces Hispanic culture through reading, conversation and writing. Focuses on specific regions and topics (subtitled in the schedule). Conducted in Spanish or English (subtitled in the schedule). Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 260C. Spanish Culture. 1 Credit. Spanish culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subtitled in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 261B. Spanish Culture. 2 Credits. Hispanic culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subtitled in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 262A. Spanish Culture. 3 Credits. Introduces Hispanic culture though reading, conversation and writing. Focuses on specific regions and topics (subtitled in the schedule). Conducted in Spanish or English (subtitled in the schedule). Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 270A. Readings in Spanish Literature (Hispanic). 3 Credits. Reading and discussion of Hispanic people and culture through essays, poetry, short story, novels and theater. Focuses on the Hispanic region, period and genre subtitled in the schedule. Conducted in Spanish. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 271A. Readings in Spanish Literature (Women Writers). 3 Credits. Literature written by women in Spanish. Conducted in Spanish. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

SPA 272A. Readings in Spanish Literature (Spain). 3 Credits. Covers reading and discussion of Spanish people and culture through essays, poetry, short story, novels and/or theater. Focuses on peninsular literature, period and genre subtitled in the schedule. Conducted in Spanish. Prerequisites: WR 115, RD 115, and MTH 20, or equivalent placement test scores. Audit available.

SPA 279A. Spanish Composition. 3 Credits. Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 290B. Spanish Composition. 2 Credits. Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 291A. Spanish Composition. 3 Credits. Reviews and practices basic grammatical concepts to increase confidence and fluency in writing correctly. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.
THEATRE ARTS

TA 101. Theatre Appreciation. 4 Credits.
Explores live theatre productions in Portland metro area, enriching the understanding and appreciation of the theatrical event. Includes reading, researching and evaluating a play to collaboratively create a unified design. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

TA 111. Fundamentals of Technical Theatre. 4 Credits.
Covers basic principles and techniques of technical theatre such as stage design, lighting, properties and stage management. Explores the role of the technician in the theatre organization. Lecture and lab allows flexible scheduling. Audit available.

TA 112. Introduction to Set Design. 4 Credits.
Covers elements of technical theater including practical hands-on experience in designing a stage set. Focuses on the use of tools as well as construction materials and techniques used in the modern theater. Students are required to do three hours of lab per week. Audit available.

TA 113. Introduction to Stage Lighting. 4 Credits.
Explores theatre and studio lighting. Focuses on elements of electricity, optics, stage lighting design, color in light, stage lighting instruments and intensity controls. Participate in stage lab activities. Audit available.

TA 116. Stagecraft. 3 Credits.
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. Given the 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 per week and participation in departmental productions presented that term. Prerequisite: MTH 20. Audit available.

TA 141. Fundamentals of Acting Techniques. 4 Credits.
Introduces basic theatrical techniques. Develops text analysis and performance skills. Develops the beginning level awareness of the physical and vocal skills required of a stage performer. Includes reading and analyzing plays to develop acting skills. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

TA 142. Fundamentals of Acting Techniques. 4 Credits.
Acquires concentration and relaxation in approaching a role. Improve performance skills with focus on vocal and physical control. Scene study is used. Prerequisite: TA 141 and its prerequisite requirements. Audit available.

TA 143. Fundamentals of Acting Techniques. 4 Credits.
Practice skills from TA 141 and TA 142. Stresses further inquiry and use of knowledge and skills in performance. Includes audition techniques. Prerequisite: TA 141 and its prerequisite requirements. Audit available.

TA 144. Improvisational Theatre. 3 Credits.
Become more in touch with the body and senses as used to express yourself and communicate with others. Includes exercise, theatre games and impromptu scenes to tap the creative potential of the human imagination. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 145. Acting for the Camera. 4 Credits.
Identifies, exercises and utilizes the actor’s resources to develop acting techniques specifically meant for acting on a visually recorded medium (camera). Taught only in conjunction with Video Production 2. Prerequisite: TA 141. Audit available.

TA 147. Voice and Diction for the Theatre. 3 Credits.
Introduces vocal production through a series of exercises which will increase muscle awareness, flexibility and freedom. Includes the mechanics of blank verse, auditioning and material selection as well as voice projection, articulation and performance. Audit available.

TA 148. Movement for the Stage. 3 Credits.
Develops awareness and skills in movement as related to acting and communication. Focuses on body awareness, relaxation, energy, creating physical images and character, and communicating through body language. Explores expression through movement. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 180A. Theater Rehearsal and Performance. 1 Credit.
Credit for performance in theater production, if cast. Gain first-hand experience in performance techniques. Audition required. Audit available.

TA 180B. Theater Rehearsal and Performance. 2 Credits.
Performance in theater production. Audition required. Audit available.
COURSE DESCRIPTIONS

TA 274. Theatre History. 4 Credits.
Explores the nature of the theatrical event, its emergence and significance in the lives of the people of the past from ancient Greece to the present. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 290A. Projects in Theatre. 1 Credit.
Advanced independent study course. Contract with a theatre arts instructor for individual project. Examples of projects could be assistant directing, lighting design, costuming, dramaturge. May be repeated. Audit available.

TA 290B. Projects in Theatre. 2 Credits.
Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

TA 290C. Projects in Theatre. 3 Credits.
Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

VETERINARY TECHNOLOGY

VT 101. Introduction to Veterinary Technology. 2 Credits.
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 Credits.
Teaches 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 Credits.
An introduction to veterinary medical records, admitting procedures, history taking, record maintenance for both in/out patient, and kennel records. Includes follow-up and discharge procedures on filing and record retention. Covers using the computer in veterinary medicine.

VT 104. Facility Ward Care. 2 Credits.
Introduces principles of daily animal husbandry, socialization, enrichment, and clinical care on campus in program facilities. Explores teamwork, communication, veterinary technical skills, and principles of professionalism encountered in the daily operations of a multispecies veterinary facility. Prerequisites: BI 112, CH 100.

VT 105. Comparative Veterinary Anatomy and Physiology I. 4 Credits.
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 Credits.
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 Credits.
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 importance, and important nutritionally caused diseases. Covers care and handling of orphaned animals and special prescription diets. Prerequisites: VT 105, 106, 111; (BI 101 or BI 101B); BI 102; CH 100.

VT 108. Pharmaceutical Mathematics 1. 1 Credit.
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 Credits.
Introduces x-ray 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 Credit.
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 Credits.
Develops the knowledge and skills necessary to perform hematology and urinalysis. Includes how to perform a complete blood count and to do a urine analysis using current technology. Prerequisites: VT 105; (BI 101 or BI 101B), BI 102; CH 100.

VT 112. Clinical Laboratory Procedures. 5 Credits.
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 Credits.
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 Credits.
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 Credits.
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 Credits.
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 Credits.
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 Credits.
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 Credits.
Teaches the practical application of radiography in the veterinary profession. Includes principles of x-ray production, the operation and uses of x-ray machines, the care and development of films, and radiographic positioning of animals. Prerequisites: VT 105, 106, 109.

VT 205. Veterinary Pharmacology. 4 Credits.

VT 207. Public Health and Sanitation. 2 Credits.
Covers the principles of public health 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 Credits.
Covers important diseases and disease processes occurring in small animals are covered. Includes the causes, pathogenesis, clinical signs, treatment and prevention of each disease. Prerequisites: VT 105, 106, 111, 205, 112, 113.

VT 209. Large Animal Diseases and Procedures. 3 Credits.
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 Credits.
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.

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WLD 136A. Beginning Wire Welding. 3 Credits.
Develops common weld joint in the 1F and 2F positions. Develops foundational skills required for advancement in future coursework. First class in a four course sequence. Audit available.

WLD 136B. Basic Wire Welding. 3 Credits.
Develops basic welding skills and industry standards as they apply to the wire welding process. Introduces common weld joints in the 2F and 3F positions. Develops foundational skills required for advancement in future coursework. Second class in a four course sequence. Audit available.

WLD 141. Flux-Cored Arc Welding I (Gas Shielded). 3 Credits.
Develops knowledge and manipulative skills using the flux-cored arc welding process in the flat, vertical, horizontal and overhead positions. Department permission required. Audit available.

WLD 142. Flux-Cored Arc Welding II (Self Shielding). 3 Credits.
Develops knowledge and manipulative skills in the self-shielding arc welding process in the flat, vertical, horizontal and overhead positions. Department permission required. Audit available.

WLD 146A. Beginning Pipe Welding Practice. 3 Credits.
Introduces joining pipe per ASME Section IX and industry standards. First class in a four course sequence. Audit available.

WLD 146B. Basic Pipe Welding Practice. 3 Credits.
Introduces joining pipe in the 2G position per ASME Section IX Weld Code. Second class in a four course sequence. Audit available.

WLD 151. SMAW Certification Practice: Unlimited Thickness Mild Steel. 3 Credits.
Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Department permission required. Audit available.

WLD 152. Wire Welding Certification Practice. 6 Credits.
Methods and skills to improve and upgrade welding techniques to a qualification level to become certified in the gas metal arc and flux-cored arc welding processes. Department permission required. Audit available.

WLD 156A. Beginning Oxy-Acetylene Welding Practice. 3 Credits.
Introduces the joining of plate using oxy-fuel welding. First class in a four course sequence. Audit available.

WLD 156B. Basic Oxy-Acetylene Welding Practice. 3 Credits.
Introduces the joining of plate using oxy-fuel welding. Second class in a four course sequence. Audit available.

WLD 166A. Beginning Weld Practice Metal Sculpting. 3 Credits.
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. Audit available.

WLD 166B. Basic Weld Practice Metal Sculpting. 3 Credits.
Reviews, incorporates and builds upon material presented in WLD 166A. Introduces common weld joints as they apply to the fabrication of metal sculpture. Second class in a four course sequence. Audit available.

WLD 176A. Beginning Fabrication Welding Practice. 3 Credits.
Introduces beginning fabrication of welded structures. First class in a four course sequence. Audit available.
WLD 186A. Beginning Certification Welding Practice. 3 Credits.
Introduces preparing and joining plates for certification as per AWS D1.1 Structural Steel Welding Codes. First class in a four course sequence. Audit available.

WLD 186B. Basic Certification Welding Practice. 3 Credits.
Introduces preparing and joining plates in the 2G position for certification as per AWS D1.1 Structural Steel Welding codes. Second class in a four course sequence. Audit available.

WLD 190A. Beginning Welding Practice. 1 Credit.
Introduces welding and industry standards. Develops foundational skills required for advancement in future coursework. First class in a three course sequence. Audit available.

WLD 190B. Basic Welding Practice. 2 Credits.
Develops knowledge and practice with a welding process and perform welding in accordance with industry standards. Develops foundational skills required for advancement in future coursework. Second class in a three course sequence. Audit available.

WLD 190C. Intermediate Welding Practice. 3 Credits.
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. Audit available.

WLD 203. Structural Steel Welding Code & Standards. 4 Credits.
Develops technical knowledge necessary for the reading and understanding of the AWS Structural Steel Welding Code, D1.1. Purpose of course is to enable student to use a systematic method in the application and understanding of the Structural Steel Welding Code. Audit available.

WLD 210. Aviation Welding. 2 Credits.
Develops knowledge and manipulative skills with oxy-acetylene welding, torch brazing, and gas tungsten arc welding processes on steel and aluminum when performing various welds. Training will conform to current FAA 14CFR Part 147 requirements. Prerequisites: Placement into RD 90 or higher; placement into WR 90 or higher; MTH 60 or higher; ART 101 with a C or higher. Audit available.

WLD 211. Auto Collision Repair Welding Aluminum. 2 Credits.
Develops knowledge and manipulative skills using the Gas Metal Arc Welding-Pulse transfer process on aluminum performing various welds to I-CAR industry standards. Covers safety, uses, nomenclature, equipment operation and set up and shut down procedures. Audit available.

WLD 216. Miscellaneous Electrodes & Advanced Positions. 3 Credits.
Develops knowledge and manipulative skills in the use of a variety of electrodes when welding complex joints and welding positions. Department permission required. Audit available.

WLD 216A. Intermediate Welding Practice. 3 Credits.
Introduces intermediate shielded metal arc welding process in accordance with AWS D1.1 Structural Steel Welding Codes, and to industry standards. Weld mild steel in the 3F and 4F positions. Third class in a four course sequence. Audit available.

WLD 216B. Advanced Metal Arc Welding. 3 Credits.
Introduces intermediate shielded metal arc welding, in accordance with AWS D1.1 Structural Steel Welding Codes, and to industry standards. Weld mild steel in the 3G and 4G positions. Fourth class in a four course sequence. Audit available.

WLD 217. Diesel Welding. 3 Credits.
Develops knowledge and skills in welding required of a diesel mechanic. Focuses on maintenance and repair applications using SMAW, OAW, and OAC processes. Department permission required. Audit available.

WLD 221. Gas Tungsten Arc Welding Mild Steel. 3 Credits.
Develops knowledge and manipulative skills while welding common joints in all positions on mild steel with the G T A W process. Department permission required. Audit available.

WLD 222. Gas Tungsten Arc Welding: Aluminum. 3 Credits.
Develops knowledge and manipulative skills while welding common joints in all positions on aluminum with the G T A W process. Department permission required. Audit available.

WLD 223. Gas Tungsten Arc Welding: Stainless Steel. 3 Credits.
Develops knowledge and manipulative skills while welding common joints in all positions on stainless steel with the G T A W process. Department permission required. Audit available.

WLD 224. Gas Tungsten Arc Welding: (Mild Steel) Pipe I. 3 Credits.
Develops knowledge and manipulative skills required to weld mild steel pipe in all positions using the G T A W process. Department permission required. Audit available.

WLD 225. Gas Tungsten Arc Welding: (Mild Steel) Pipe II. 3 Credits.
Develops knowledge and manipulative skills while welding a variety of diameters mild steel pipe in the 6G, (fixed 45 angle) using the G T A W process. Department permission required. Audit available.

WLD 226A. Intermediate Gas Tungsten Arc Welding (Heliarc). 3 Credits.
Introduces gas tungsten arc welding on Aluminum to industry standards. Welds common joint configurations. Develops foundational skills required for advancement in future course work. Third class in a four course sequence. Audit available.

WLD 226B. Advanced Gas Tungsten Arc Welding (Heliarc). 3 Credits.
Introduces gas tungsten arc welding on Stainless Steel to industry standards. Welds common joint configurations. Develops foundational skills required for advancement in future course work. Fourth class in a four course sequence. Audit available.

WLD 236A. Intermediate Wire Welding. 3 Credits.
Introduces welding in the 3F and 3G positions and weld quality as it applies to industry standards in the wire welding process. Develops foundational skills required for advancement in future coursework. Third class in a four course sequence. Audit available.

WLD 236B. Advanced Wire Welding. 3 Credits.
Introduces welding in 4F and 4G positions. Puddle and heat control in the overhead position. Knowledge of weld quality as it applies to the wire welding process. Develops foundational skills required for “out of position welding.” Fourth class in a four course sequence. Audit available.

WLD 246A. Intermediate Pipe Welding Practice. 3 Credits.
Introduces joining pipe in the 6G position per ASME Section IX Welding Code. Third class in a four course sequence. Audit available.

WLD 246B. Advanced Pipe Welding Practice. 3 Credits.
Introduces joining pipe in the 5G position per ASME Section IX Welding Code. Fourth class in a four course sequence. Audit available.

WLD 253. SMAW Certification Practice 3/8" Mild Steel (E6011). 3 Credits.
Practice for the American Welding Society Mild Steel Welding Certification tests using SMAW mild steel electrodes in the horizontal, vertical and overhead positions. Department permission required. Audit available.

WLD 254. SMAW Certification Practice 3/8" Mild Steel (E7018). 3 Credits.
Practice for the American Welding Society Mild Steel Welding Certification tests using SMAW low hydrogen electrodes in the vertical, horizontal and overhead positions. Department permission required. Audit available.

WLD 256. Preparation for Pipe Certification I. 3 Credits.
Develops knowledge and skills in the use of melt-through procedures in preparation for pipe welding with the shielded metal arc process. Department permission required. Audit available.

WLD 256A. Intermediate Oxy-Acetylene Welding Practice. 3 Credits.
Introduces the joining of plates using oxy-fuel welding. Third class in a four course sequence. Audit available.

WLD 257. Preparation for Pipe Certification II. 3 Credits.
Practice for pipe certification using the S M A W process to weld pipes in all positions. Department permission required. Audit available.

WLD 261. Basic Fabrication I. 6 Credits.
Develops fabrication knowledge and skills in selection and use of layout tools and equipment, to assemble a fabrication project from given specifications. Department permission required. Audit available.

WLD 262. Basic Fabrication II. 6 Credits.
Develops knowledge and skills in the proper selection and safe use of hand tools and machinery while working on specific fabrication projects. Department permission required. Audit available.

WLD 263. Welding Technology - Capstone. 6 Credits.
Students will demonstrate readiness for welding employment through the development and performance of a comprehensive hands-on welding related Service Learning Project, and the successful completion of an industry based written assessment. Prerequisite: Completion of One-Year Certificate of Completion in Welding Technology. Audit available.

WLD 266A. Intermediate Weld Practice Metal Sculpting. 3 Credits.
Focusses on producing code quality welds as they apply to the fabrication of metal sculpture. Introduces AWS D1.1 welding code and visual inspection techniques. Third class in a four course sequence. Audit available.
WLD 286B. Advanced Weld Practice Metal Sculpting. 3 Credits.
Review, practice and strengthen previously learned welding techniques in the fabrication of welded metal sculpture. Fourth class in a four course sequence. Audit available.

WLD 271. Oxy-acetylene Welding Projects. 3 Credits.
Practice hand coordination and controlling heat while welding steel with oxy-acetylene equipment using all positions. Department permission required. Audit available.

WLD 276A. Intermediate Fabrication Welding Practice. 3 Credits.
Introduces intermediate fabrication of welded structures. Develops advanced skills as required for industry. Third class in a four course sequence. Audit available.

WLD 276B. Advanced Fabrication Welding Practice. 3 Credits.
Introduces advanced fabrication of welded structures. Develops advanced skills as required for industry. Fourth class in a four course sequence. Audit available.

WLD 280A. Cooperative Education: Welding. 1-4 Credit.
On-the-job experiences which allow for the application and development of knowledge and skills acquired in the on-campus program. Work experiences are offered for variable credit up to a maximum of four credits. Department permission required. Audit available.

WLD 280B. Cooperative Education: Welding - Seminar. 1 Credit.
Share experiences with other students and the on-campus instructor in order to develop strategies for successful cooperative work experiences and future employment. Department permission required. Audit available.

WLD 286A. Intermediate Certification Welding Practice. 3 Credits.
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. Audit available.

WLD 286B. Advanced Certification Welding Practice. 3 Credits.
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. Audit available.

WLD 290. Submerged Arc Welding. 2 Credits.
Develops knowledge and skills with the submerged arc welding process. Department permission required. Audit available.

WLD 295. Sculpture Welding II. 4 Credits.
Develops the artist's knowledge and skills with Oxyacetylene welding and cutting, SMAW (stick) welding, GMAW (wire) welding and TIG (gas tungsten) arc welding processes. Explores metal sculpture design and construction with supporting demonstrations, slides, lectures and films. Completion of ART 293 strongly recommended. No prior welding experience is required. Audit available.

WOMEN'S STUDIES
WS 101. Women's Studies. 4 Credits.
Surveys and critically analyzes the position of women in society, in terms of present realities and future possibilities. Provides a framework to connect personal experience with contemporary social and political issues. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AS, Arts and Letters/AGS, Social Sciences/AS, Arts and Letters/AAOT, Social Sciences/AGS, Social Sciences/AAOT, Social Sciences/ASOT, Social Sciences/ASOT-B.

WS 201. Women of the World. 4 Credits.
Examines the position of women in society from a cross-cultural perspective. Topics include the process of gender enculturation, women's lives in foraging, pastoral and agricultural societies and international issues such as female circumcision, infanticide, child brides and honor/dowry deaths. Recommend: WS 101. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AS, Social Sciences/AGS, Social Sciences/AAOT, Social Sciences/ASOT-B.

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. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AS, Social Sciences/AGS, Social Sciences/AAOT, Social Sciences/ASOT-B.

WRITING
WR 80. Writing 80. 3 Credits.
Instruction includes basic communication skills, language mechanics, grammar, spelling, sentence structure and paragraph development. Prerequisite: Placement into WR 80 and RD 80. Audit available.

WR 80C. Writing 80C. 3 Credits.
Instruction includes basic communication skills, language mechanics, grammar, spelling, sentence structure and paragraph development. Prerequisites: (ABE 0784 or placement into WR 80) and (ABE 0783 or placement into RD 80) Audit available.

WR 90. Writing 90. 3 Credits.
Instruction includes sentence structure, paragraph and essay development, and written expression. Students can expect to improve working vocabulary and improve skills in basic communications. Prerequisite: Placement into WR 90 or completion of WR 80 and placement into RD 90 or completion of RD 80 with a "C" or better. Audit available.

WR 90C. Writing 90C. 3 Credits.
Includes instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other sentence errors. WR 91A and WR 91 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

WR 91A. Basic Grammar. 1 Credit.
Instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other sentence errors. This class is offered in a flexible schedule, lecture/lab format. WR 91A and WR 91 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

WR 91B. Basic Grammar. 1 Credit.
Instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other sentence errors. This class is offered in a flexible schedule, lecture/lab format. WR 91A and WR 91 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

WR 92A. Basic Grammar. 2 Credits.
Instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other errors. Audit available.

WR 92B. Basic Grammar. 2 Credits.
Instruction in grammar including parts of speech, sentence types, subject verb agreement, pronoun usage and avoidance of fragments, run-ons, and other errors. Audit available.

WR 93. Basic Grammar. 3 Credits.
Overview of some fundamental principles of American English grammar including parts of speech, sentence types, sentence analysis, simple/compound/complex sentences, subject-verb agreement, pronoun usage, selected homonyms, punctuation, capitalization, and avoidance of fragments, run-ons, and other errors. Audit available.

WR 105. Writing for Scholarships. 1 Credit.
This course is part of a new learning community designed to help students get scholarship funding for college. (This will help our own students pay for PCC classes as well as pay for funding a transfer to a university.) WR 105 deals specifically with writing essays and other written communication required in the competitive scholarship process. Prerequisite: Placement into WR 115 or instructor approval. Corequisites: Concurrent enrollment in CG 105. Audit available.

WR 115. Introduction to Expository Writing. 4 Credits.
Introduces college level skills in reading critically, exploring ideas, and writing. Covers composing essays which support a thesis through structure appropriate to the thesis and reader and revision for clarity and correctness. Prerequisites: Placement into WR 115 or completion of WR 90 or ESOL 262) and (placement into RD 115 or completion of RD 90 or ESOL 260). Audit available.

WR 117. Introduction to Technical Writing. 3 Credits.
Focuses on the specific writing needs of career programs: procedures, proposals, letters, memoranda, lab reports, work reports. Prerequisite: WR 115 or placement into WR 121. Audit available.

WR 120. Intermediate Writing. 3 Credits.
Develops knowledge and skills with the intermediate writing process. Department permission required. Audit available.

WR 121. Advanced Writing. 3 Credits.
Develops knowledge and skills with the advanced writing process. Department permission required. Audit available.

WR 125. College Writing. 4 Credits.
Develops knowledge and skills with the college writing process. Department permission required. Audit available.
WR 121. English Composition. 4 Credits.
Focuses on academic writing as a means of inquiry. Uses critical reading, discussion and the writing process to explore ideas, develop cultural awareness and formulate positions. Emphasizes development of a variety of strategies to present evidence in support of a thesis. Prerequisite: Placement into WR 121, or completion of WR 115 and RD 115. Audit available.

WR 121H. English Composition: Honors. 4 Credits.
This is the Honors version. Focuses on academic writing as a means of inquiry. Uses critical reading, discussion and the writing process to explore ideas, develop cultural awareness and formulate positions. Emphasizes development of a variety of strategies to present evidence in support of a thesis. Prerequisite: 3.25 GPA and placement into WR 121, or completion of WR 115 and RD 115. Audit available.

WR 122. English Composition. 4 Credits.
Continues the focus of WR 121 on academic writing as a means of inquiry with added emphasis on persuasion and argument supported by external research. Uses critical reading, discussion and the writing process to explore ideas, develop cultural awareness and formulate original positions. Emphasizes development of writing and critical thinking through logical reasoning, rhetorical control, independent research and information literacy. Prerequisite: WR 121. Audit available.

WR 122H. English Composition: Honors. 4 Credits.
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 argumentative, expository, and/or expository essays with appropriate documentation. Students will explore principles of classical and neoclassical rhetoric theory while becoming confident members of the academic community. Prerequisite: WR 121 and 3.25 GPA. Audit available.

WR 123. English Composition. 3 Credits.
Uses extensive research writing to develop skills in critical analysis and documented argument. Students synthesize their considered response to designated text(s) and/or issues with the reactions of other writers. Includes paraphrasing, summarizing, quoting, and documenting using style appropriate to discipline researched. Prerequisite: WR 122. Audit available.

WR 180. Composition Conferencing and Tutoring. 1 Credit.
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. Audit available.

WR 185. English Language: Theory and Practice. 3 Credits.
Explores elements and nuances of Standard English and dialects in both theory and practice. Explores historical, social, and current cultural issues of grammar and language use through reading, discussion, and writing. Prerequisites: Placement into WR 121 or WR 115 with a grade of C or better. Audit available.

WR 222. Writing Research Papers. 4 Credits.
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 research. Includes paraphrasing, summarizing, quoting, and documenting, using style appropriate to discipline researched. At least two conferences required. Prerequisite: Completion of WR 122 with a grade of “C” or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 227. Technical and Professional Writing 1. 4 Credits.
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 instructed conferences required. Prerequisites: WR 121, basic computer literacy, and intermediate word processing skills. Audit available.

WR 240. Creative Writing - Nonfiction. 4 Credits.
Introduces creative nonfiction and the writing of essays using creative techniques, such as personal narrative, memoir, and travel writing, and literary journalism. Explores the works of established writers for forms, techniques and styles as a context for the production of creative nonfiction for class discussion and analysis. Prerequisite: WR 121. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 241. Creative Writing - Fiction. 4 Credits.
Introduces writing short fiction for class discussion and analysis in a workshop setting. Explores the techniques, styles, and structures of the writings of established authors, as well as the creative writing process from development of an idea to revision of a manuscript. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 242. Creative Writing - Poetry. 4 Credits.
Focuses on the writing and submitting of poetry for class discussion and analysis in a workshop setting. Introduces the techniques, structures, and styles of established poets. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 243. Creative Writing - Script Writing. 4 Credits.
Focuses on writing and submitting theatre and film scripts for class discussion and analysis. Studies established writers for techniques, structures, and styles. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 244. Advanced Creative Writing - Fiction. 4 Credits.
Extends the craft of fiction started in WR 241. Explores the creative writing process from development of an idea to revision of a manuscript. Introduces the techniques, structures, and styles of established writers. Prerequisites: WR 241 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 245. Advanced Creative Writing - Poetry. 4 Credits.
Extends the introduction to the craft of poetry in WR 242. Write poetry, have work critiqued by peers and the instructor, and critique the work of others in a workshop setting. Students without WR 242 may enter the class with instructor permission. Prerequisite: WR 242 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 246. Advanced Creative Writing, Editing & Publishing. 4 Credits.
Extends the introduction of creative nonfiction and the writing of essays using creative techniques, such as personal narrative, memoir, nature and travel writing, and literary journalism. Explores the works of established writers for forms, techniques and styles as a context for the production of creative nonfiction for class discussion and analysis. Prerequisite: WR 240 or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 247. Advanced Creative Writing - Scriptwriting. 4 Credits.
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. Explores small group activities, and conferences. Prerequisite: WR 242 and its prerequisite requirements; or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 248. Advanced Creative Writing - Nonfiction. 4 Credits.
Extends the introduction of creative nonfiction and the writing of essays using creative techniques, such as personal narrative, memoir, nature and travel writing, and literary journalism. Explores the works of established writers for forms, techniques and styles as a context for the production of creative nonfiction for class discussion and analysis. Prerequisite: WR 241. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

WR 249. Advanced Creative Writing, Editing & Publishing II. 4 Credits.
Extends the introduction to editing manuscripts and designing and publishing printed chapbooks and literary magazines. Prerequisite: WR 248 or instructor permission. Audit available.

WR 280A. Cooperative Education: Technical Writing. 1-5 Credit.
Offers technical and professional writing work experience. Is offered for variable credit up to a maximum of five credits. Students receive one credit for every 40 hours of successful work experience. Department permission is required to take this course. Audit available.
WR 9599. Professional Editing. 3 Credits.
Introduces different types of editors and edits. Includes extensive editing practice with a wide variety of projects, individual and team based. Also emphasizes the editor's critical role in the production process. Prerequisite: WR 122 or WR 214. Audit available.

WR 9600. Technical and Professional Writing II. 3 Credits.
Includes document design, researching, organizing, managing and producing complex technical and professional documents. Prerequisites: Grade of "B" or better in GD 120, WR 227, WR 9599 and WR 9601. Audit available.

WR 9601. Graphics for Technical and Professional Writers. 3 Credits.
Applies the graphic art skills learned in GD 120 to technical and professional writing projects. Combines those skills with skills in electronic layout and design. Prerequisite: Grade of 'B' or better in GD 120 and WR 227. Audit available.
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