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The Portland Community College Catalog is published each academic year. This catalog is effective Fall 2016 through Summer 2017.

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.
STEPS FOR NEW STUDENTS

Enrollment Services: 971-722-8888, option 2
Helpline hours: Monday to Thursday: 9am to 5pm; Friday: 9am to 4pm
Email: enroll@pcc.edu

Apply now: pcc.edu/enroll
Complete the orientation: pcc.edu/orientation
Plan your first term: pcc.edu/enroll/first-term
Register for classes: pcc.edu/registration

Full-time students at Portland Community College are those who register for 12 or more credits per term. Students who register for less than 12 credits in a term are part-time. Part-time enrollment statuses are:

- 9-11 credits – three-quarter time enrollment
- 6-8 credits – half-time enrollment
- 1-5 credits – quarter-time enrollment

Enrollment status can affect eligibility for financial aid, veterans benefits and scholarships.

Learn more about becoming a student
- Submit an information request
- Come to a New Student Welcome Day
- Attend a PCC Preview Day

The application process is different for:
- International students
- Dual enrollment with a four-year university
- Community Education (non-credit classes)
- CLIMB Center for Advancement
- Applicants 16 or 17 years of age
- Applicants 14 or 15 years of age
- High School Partnership Programs

Need help?
If you’re enrolling at PCC for the first time, the Enrollment Services office can help you get started.

Cascade SSB 102B, Answer Center
Tel. 971-722-8888, option 2
Email: enroll@pcc.edu

Rock Creek: Bldg 9 Rm 102
Tel. 971-722-8888, option 2
Email: enroll@pcc.edu

Southeast: SCOMM 115 Answer Center
Tel. 971-722-8888, option 2
MAKE PAYMENT ARRANGEMENTS

Student Account Helpline: Tel. 971-722-8888, option 3
TTY: 1-800-735-2900
Helpline hours Monday thru Thursday: 9am to 5pm; Friday: 9am to 4pm
Email: student.accounts@pcc.edu

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.

Payment is due two weeks before the first day of term. If you enroll after that date, payment is due immediately. Bills are issued beginning three weeks before the term. You can see your balance or access your bill online in the MyPCC Paying for College tab.

The cost of credit classes is based on the number of credit hours. Credit hours for each course are listed in the class schedule. There are other fees that may apply during your time as a student. Oregon residents 62 and older may be eligible for free or discounted tuition for seniors.

Non-credit classes are priced individually. For tuition and fees, check each course listing in the online class schedule. You are responsible for paying your account in full, even if you do not receive a bill.

Residency and Tuition

Use the chart to determine your residency status and what type of tuition you will pay.

<table>
<thead>
<tr>
<th>Residency Status</th>
<th>Description</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-State Student</td>
<td>American citizen or immigrant with a permanent resident status in Oregon, Idaho, California, Nevada and Washington</td>
<td>Resident Tuition</td>
</tr>
<tr>
<td>International Student</td>
<td>International student (holding a visa other than those listed above)</td>
<td>Non-Resident Tuition</td>
</tr>
<tr>
<td>Out-of-State Student</td>
<td>Student residing in states which do not border Oregon</td>
<td>Non-Resident Tuition</td>
</tr>
</tbody>
</table>

Note: A person eligible for benefits under the federal Post-9/11 Veterans Educational Assistance Act of 2008 (38 U.S.C Section 3301 et seq.) or any other federal law authorizing educational benefits to veterans shall be entitled to Oregon resident status for purposes of tuition and fees charged at Portland Community College.

Ways to Pay

These are the types of payment PCC accepts. You must have one of these payment arrangements in place by the payment due date or your course registrations may be deleted. If you are unable to attend, it is up to you to drop the class.

Payment in Full
You can pay your bill by the payment due date. We don’t accept partial payments, or post-dated or two party checks.

- Online using PCC-Pay in MyPCC: echeck, debit card, Visa or MasterCard.
- In-person at Student Account Services: cash, check, debit card, Visa or MasterCard.
- By mail. Send checks and money orders payable to PCC Student Account Services.
- International Payments must be sent through flywire.

Payment Plan

Our interest-free payment plans are a smart way to pay college costs. Payment plans allow you to spread the cost of your education into affordable monthly or bi-weekly payments. Sign up for payment plans on the Paying for College tab in MyPCC.

Financial Aid

Financial aid loans and grants are available to help with college costs. Check your status in the Financial Aid Dashboard in MyPCC. Review and accept your award by the payment due date, or choose another way to pay.

Oregon Promise

Oregon Promise provides grants for recent high school graduates and GED earners. Learn about eligibility requirements on the Oregon Promise portal.

Veterans Benefits

Veterans are entitled to assistance with their college expenses. Funds are also available for some spouses and dependents. Apply with the VA and certify your schedule with the Veterans Education Benefits Office. (Tuition assistance programs such as Voc Rehab, Go Army, and MyCAA are handled through third party billing.)

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.

Third Party Billing

Many employers and agencies assist students with college costs. To have your bill paid by a third party, formal billing arrangements must be set up and approved by the college before the term begins.

Scholarships

The PCC Foundation and numerous other foundations and private donors provide scholarships to PCC students. If you are one of the...
fortunate recipients, your donor will send us a check and tell us what the scholarship covers.

**AmeriCorps Vouchers**
AmeriCorps is a program that provides tuition vouchers for volunteers in service to America. To redeem your AmeriCorps vouchers, you will need to request funds via the AmeriCorps online process.

**Tuition Waivers**
Some students are eligible for tuition waivers or belong to programs that will pay tuition as a benefit of participation.

**Late Payment**
You must pay the full amount due by the due dates shown at www.pcc.edu/pay. If you don’t pay by the due date, one or more of the following steps will be taken:

- Deletion of your course registration.
- Late fee. A late fee of up to 10% of your unpaid tuition and fees.
- Financial hold. A financial hold will be placed on future registration and transcripts.
- Collection of your past due balance by an outside agency. Accounts in collection are subject to additional charges and penalties.

Do not count on the college to remove you from classes - it is up to you to manage your own schedule and drop any courses you will be unable to attend. Find out how to drop a class.

**Removing Tuition Charges**
Charges are applied to your student account when you register for a class. All of the charges associated with a class will be removed if you drop the class by the drop deadline. No charges will be removed if you drop after the drop deadline. To drop a Community Education class, see the Community Education Refund/Drop Policy. If an extreme hardship prevented you from continuing your studies through the term, you may request a tuition voucher by filing an appeal with the college appeal committee. Your appeal must be received by the filing deadline and all past due amounts must be paid before your appeal will be considered.

**Educational Tax Credits**
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 tax identification number (TIN) or social security number (SSN) is required for tax reporting. To update your TIN or 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 student accounts office prior to the end of the tax year.
TRANSPORTATION AND PARKING SERVICES

Sylvania CSB 329: 971-722-8181
Fax: 971-722-4762
Open Mon-Fri, 8am - 4:30pm
Email: parking@pcc.edu
www.pcc.edu/resources/parking/

Commuting to PCC campuses can present challenges to students, faculty, staff, the environment, and our neighbors. That’s why we offer alternatives to driving alone. Help us improve the livability of our community by riding transit, the PCC shuttle, biking, carpooling, or walking to PCC.

Parking Permits
Vehicles parked on a PCC campus or center must display a current parking permit on their rear view mirror or dash. Permits are required at PCC year round for both staff, students, and visitors.

PCC Shuttle
The Shuttle is a free service to PCC students, faculty, and staff providing transportation between campuses, downtown (PSU) and select transit stops.

Public Transit
PCC has cost saving programs in-place for students, faculty, and staff. Eligible students can purchase reduced TriMet term passes at Student Account Services. Eligible faculty and staff can purchase TriMet passes pre-tax via payroll deduction. TriMet tickets and monthly passes are also available for purchase at all campus bookstores. Subsidized 3 month TriMet passes can be purchased from the student accounts office the week before term begins.

Biking
Biking to work and/or school has benefits for your health, your wallet, and the environment. There are bike racks, locker rooms, and showers available at most campuses. Students at Cascade and Southeast can rent bikes for $15 per term through ASPCC.

Car Sharing
Car Sharing is a short-term car rental agreement where you pay by the hour and the rate includes your insurance and gas. If you drive a Car2Go or Zipcar to a PCC Campus, you will not need a parking permit. Car2go has a designated parking spot at Cascade, Sylvania and Southeast.

Ride Sharing
In addition to saving gas, carpoolers are eligible for a discounted parking permit.

Motorcycle/Scooter
2-wheeled motor vehicles park for free on PCC campuses in designated areas

Walking
Free, healthy, and carefree!
STEPS TO GRADUATION

Students at Portland Community College are automatically awarded degrees and certificates upon completion of requirements for the student’s recorded program of study. Opting out of an institutional award requires emailing the Student Records and Graduation Office. Multiple credentials may be automatically awarded within a student’s program of study.

1) Declare your program of study
   • To declare a new program of study, click Update your degree and major in the Term-to-Term Checklist on the MyPCC Home tab. Call Enrollment Services at 971-722-8888 (option 2) if you are unable to use the online form or want to add additional degree/majors or certificates.

2) Complete requirements as published in the academic catalog you are following
   • In GRAD Plan, you can discover which classes you still need to take in order to graduate! Frequently review your GRAD Plan on the My Courses tab in MyPCC. If your GRAD Plan does not reflect the academic catalog requirements you are following, please contact Student Records at 971-722-7100. Learn more about GRAD Plan.
   • If you are completing alternate requirements, please work with your Faculty Department Chair to submit a Course Substitution Form (view a sample substitution form here; actual forms available from your Department or Faculty Department Chair).
   • If you have attended a previous college or university, follow the online transfer credit request process.
   • If you are not registered for this academic term, but you believe this transferred coursework will complete your degree or certificate, please submit an Application for Graduation [pdf], so we can evaluate your records for graduation.

3) Degree evaluation
   • During your final quarter of your program of study, the Student Records office will review your academic history to confirm all requirements will be met for your degree or certificate. You will receive an email via MyPCC confirming your final courses are in progress. This email will include information about submitting your diploma name and diploma address. If you are in your final term and do not receive an email by Week 9, contact your department or Student Records.
   • If you would like additional degrees or certificates, outside of your declared program of study, you should submit the Application for Graduation [pdf] before the term you will complete those requirements.
   • Students completing their final requirements in Summer term, and who wish to participate in the Commencement Ceremony, should submit the Application for Graduation [pdf] by the published deadline.

4) Degree awarded
   • When all requirements have been met, your degree or certificate will be automatically awarded. Awarding takes place in the weeks following the term’s end and, once posted, transcripts reflecting the award date may be ordered via MyPCC. Your diploma or certificate will be mailed to your address of record at PCC 6 to 8 weeks after the term has ended. 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.
# Calendar of Instruction

## Summer 2016

<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 20</td>
<td>Sep 4</td>
<td>Aug 29 - Sep 4</td>
<td>11 Weeks</td>
</tr>
<tr>
<td>Summer 8</td>
<td>Jun 20</td>
<td>Aug 13</td>
<td>Aug 8-13</td>
<td>8 Weeks</td>
</tr>
<tr>
<td>Summer A</td>
<td>Jun 20</td>
<td>Jul 16</td>
<td>Jul 11-16</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer B</td>
<td>Jul 18</td>
<td>Aug 13</td>
<td>Aug 8-13</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer D</td>
<td>Aug 15</td>
<td>Sep 10</td>
<td>Sep 5-10</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer J</td>
<td>Jun 20</td>
<td>Jul 23</td>
<td>Jul 18-23</td>
<td>5 Weeks</td>
</tr>
<tr>
<td>Summer N</td>
<td>Jun 20</td>
<td>Aug 20</td>
<td>Aug 15-20</td>
<td>9 Weeks</td>
</tr>
<tr>
<td>Summer S</td>
<td>Jun 25</td>
<td>Sep 4</td>
<td>Sep 3-4</td>
<td>11 Weeks</td>
</tr>
<tr>
<td>Summer T</td>
<td>Jun 20</td>
<td>Aug 27</td>
<td>Aug 23-27</td>
<td>10 Weeks</td>
</tr>
<tr>
<td>Summer U</td>
<td>Jun 20</td>
<td>Jul 15</td>
<td>Jul 10-15</td>
<td>4 Weeks</td>
</tr>
<tr>
<td>Summer V</td>
<td>Jul 18</td>
<td>Aug 10</td>
<td>Aug 6-10</td>
<td>4 Weeks</td>
</tr>
</tbody>
</table>

## Fall 2016

<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 2016</td>
<td>Sep 26</td>
<td>Dec 18</td>
<td>Dec 13-18</td>
<td>12 weeks</td>
</tr>
</tbody>
</table>

## Winter 2017

<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>Winter 2017</td>
<td>Jan 9</td>
<td>Mar 26</td>
<td>Mar 20-26</td>
<td>11 weeks</td>
</tr>
</tbody>
</table>

## Spring 2017

<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>Spring 2017</td>
<td>Apr 3</td>
<td>Jun 18</td>
<td>Jun 12-18</td>
<td>11 weeks</td>
</tr>
</tbody>
</table>

## Summer 2017

<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 26</td>
<td>Sept 10</td>
<td>Sept 4-10</td>
<td>11 weeks</td>
</tr>
<tr>
<td>Summer 8</td>
<td>Jun 26</td>
<td>Aug 20</td>
<td>Aug 14-20</td>
<td>8 weeks</td>
</tr>
<tr>
<td>Summer A</td>
<td>Jun 26</td>
<td>Jul 23</td>
<td>Jul 17-23</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer B</td>
<td>Jul 24</td>
<td>Aug 20</td>
<td>Aug 14-20</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer D</td>
<td>Aug 21</td>
<td>Sept 17</td>
<td>Sept 11-17</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer J</td>
<td>Jun 26</td>
<td>Jul 30</td>
<td>Jul 24-30</td>
<td>5 weeks</td>
</tr>
<tr>
<td>Summer K</td>
<td>Jul 31</td>
<td>Sept 3</td>
<td>Aug 28 - Sep 3</td>
<td>5 weeks</td>
</tr>
<tr>
<td>Summer N</td>
<td>Jun 26</td>
<td>Aug 27</td>
<td>Aug 21 - 27</td>
<td>9 weeks</td>
</tr>
<tr>
<td>Summer S</td>
<td>Jul 1</td>
<td>Sept 10</td>
<td>Sept 9-10</td>
<td>11 weeks</td>
</tr>
<tr>
<td>Summer T</td>
<td>Jun 26</td>
<td>Sept 3</td>
<td>Aug 28 - Sept 3</td>
<td>10 weeks</td>
</tr>
<tr>
<td>Summer U</td>
<td>Jun 26</td>
<td>Jul 22</td>
<td>Jul 16 - 22</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Summer V</td>
<td>Jul 24</td>
<td>Aug 17</td>
<td>Aug 11 - 17</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/co-op
Counseling Services  www.pcc.edu/counseling
Disability Services  www.pcc.edu/disability
Education Abroad  www.pcc.edu/studyabroad
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
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 does not provide health or accident insurance for students.

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
Multicultural Centers  www.pcc.edu/resources/multicultural
Office of International Student Services  www.pcc.edu/about/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 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
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’s 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. Students who have not been consecutively enrolled (earning at least one credit per academic year) at the time of degree or certificate completion, must meet the requirements of the most current catalog.

An edition of the catalog is valid for six academic years. Some programs may impose shorter time limits on accepting credits for degree or certificate requirements.

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 2016 is only valid through summer term 2022. 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.

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. 34) section of the catalog.

Associate Degree Comprehensive Requirements

Students earning an associate’s 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
credit 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.

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

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

   • Arts and Letters
   • Social Sciences
   • Science/Math/Computer Science

   The 16 credits must include at least one course with a minimum of three credits from each category. No more than two courses may come from courses required by specific programs. Because of these restrictions, it is possible 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 advice on General Education courses appropriate to their goals and interests. General Education requirements will be waived for students who enroll at PCC with an AA, AAS, AGS, AS, BA, BS degree or higher from a regionally-accredited United States institution or foreign equivalent. 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.

   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 degrees or higher from a U.S. regionally-accredited institution or foreign equivalent will have the basic competency in writing (WR 121) waived. Other writing requirements specified by the program remain in effect.

   **Math:** Competency in mathematics or computation must be demonstrated by:

   • Completing with a grade of C or P or better MTH 58, MTH 63 or MTH 65, or
   • Passing the PCC Competency Exam for MTH 65, or
   • Completing with a grade of C or P or better a MTH course (minimum three credits) for which MTH 58, MTH 63 or MTH 65 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 three 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 coursework in the major field. The Programs and Disciplines section of the Catalog contains these coursework requirements. No more than three 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 Oregon public university.
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:**
   All courses must be passed with a grade of “C” or “P” or better. Students must have a minimum cumulative GPA of 2.0 at the time the AAOT is awarded.
   
a. **Foundational Requirements:** Courses must be a minimum of three 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 eight credits of Writing; WR 123 may be used to complete the eight credits.
   - **Oral Communication:** COMM 111 or COMM 112 or COMM 214 or SP 113.
   - **Math:** Complete a minimum of four credits in MTH 105 or any other MTH course for which MTH 95 and/or MTH 98 is a prerequisite.
   - **Health/Wellness/Fitness:** One or more courses totaling at least three credits from HE 242 or HE 250 or HE 254 or HE 295 & PE 295, or PE (not including PE 10, PE 199 or PE 299).

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 three credits. A course may count toward Foundational Requirements or Discipline Studies but not both.
   - **Arts and Letters:** Complete at least three courses chosen from at least two disciplines in this area
   - **Social Sciences:** Complete at least four courses chosen from at least two disciplines in this area
   - **Science/Math/Computer Science:** Complete at least four 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. One-credit Management/Supervisory Development (MSD) workshops may not be applied to this degree. A maximum of three 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.

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**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/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 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 institution or foreign equivalent.

   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 regionally accredited institution or foreign equivalent, will have the basic competency in writing (WR 121) waived

   **Math:** Competency in mathematics must be demonstrated by:
   - Completing with a grade of C or P or better MTH 58, MTH 63 or MTH 65, or
   - Passing the PCC Competency Exam for MTH 65, or

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*: Complete a minimum of four credits in MTH 105 or any other MTH course for which MTH 95 and/or MTH 98 is a prerequisite.

*: Complete at least four courses chosen from at least two disciplines in the AGS degree:

*: Competency in writing must be demonstrated by either:

*: Competency in mathematics must be demonstrated by:

*: 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.
The Associate of Science (AS) degree is awarded to students who meet requirements of their baccalaureate major. In selecting coursework, students should contact advisors at PCC to determine the 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.

Associate of Science Oregon Transfer-Business (ASOT-BUS)

The Associate of Science Oregon Transfer-Business (ASOT-BUS) degree is designed for students planning to transfer credits to an Oregon public university and seek entry into that institution's Business program. Students completing the ASOT-BUS will have met the lower-division General Education requirements of an Oregon public university's baccalaureate degree program. Students transferring will have junior status for registration purposes.

Admission to the Business School of an Oregon public university 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 that students contact the specific Oregon public university's 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.
2. Associate of Science Requirements:
   a. Courses listed below must be completed with a grade of "C" or "P" or better.
      - 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: One or more courses totaling at least 3 credits from HE 242 or HE 250 or HE 254 or HE 295 & PE 295, or PE (not including PE 10, PE 199 or PE 299).
      - Math*: Complete a minimum of 4 credits in MTH 105 or any other MTH course for which MTH 95 and/or MTH 98 is a prerequisite
   b. 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
   c. AS Elective Credit Requirements: All candidates must complete elective credits to meet the overall requirement of 90 credits for this degree. Elective credits may include any lower division collegiate courses (course level of 100 or higher). A maximum of 24 credits of Occupational Skills Training (OST) classes may apply.

* PCC's basic Competency Requirements for Writing and Math will be met by successfully completing these courses. The Information Literacy requirement is satisfied by successful completion of the Writing courses.
B. Discipline Studies: Students must complete at least 11 Discipline Studies courses from the General Education/Discipline Studies List. All courses in Discipline Studies must be a minimum of three credits. A course may count toward Foundational Requirements or Discipline Studies but not both.

- **Arts and Letters:** Complete at least three courses chosen from at least two disciplines in this area
- **Social Sciences:** Complete at least four courses chosen from at least two disciplines in this area. A minimum of two courses in Microeconomics and Macroeconomics must be included.
- **Science/Math/Computer Science:** Complete at least four courses in at least two disciplines. At least three of these courses must be laboratory courses in the biological or physical sciences. The fourth course can be one of the three MTH courses from the Foundational Requirements.
- **Cultural Literacy:** Students must select one course from any of the Discipline Studies that is designated as meeting the statewide criteria for cultural literacy (as indicated on the General Education/Discipline Studies List). This course can be one of the 11 required Discipline Studies courses.

C. Business-specific requirements: Each course must be completed with a "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 Management/Supervisory Development (MSD) workshops may not be applied to this degree. A maximum of three credits of Physical Education (PE) may be applied to this degree.

### Certificates

**University Specific Prerequisites, Recommendations**

Each Oregon public university 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 Oregon public university designation's 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/manager

**Oregon State University**
http://business.oregonstate.edu/

**Portland State University**
http://www.pdx.edu/sba/

**Southern Oregon University**
http://sou.edu/business/undergrad/index.html

**University of Oregon**
http://lcb.uoregon.edu/App_Aspx/advisingResources.aspx

**Western Oregon**
http://wou.edu/las/business-major.php

### Certificate Requirements:

**Two-Year (61-108 credits) Certificate Requirements**

1. At least 24 credits must be earned at PCC, 18 of which must apply to the certificate requirements.
2. The final 9 credits that apply to the certificate must be earned at PCC; the department chair may waive this requirement if the student can demonstrate currency in the field.
3. A maximum of 24 credits of "P" (Pass) grades will apply to most Two-Year Certificates. Certain CTE programs have exceptions to this requirement as stated in the requirements for the specific Two-Year Certificate.
4. A maximum of 12 credits of Cooperative Education courses may be applied to most Two-Year Certificates. Certain CTE programs have exceptions to this requirement but no program can exceed 24 credits (12 per year); these exceptions are defined in the requirements for the specific Two-Year Certificate.
5. A maximum of 9 credits of 199 and 299 experimental courses may be applied to a Two-Year Certificate.

**One-Year (45-60 credits) Certificate Requirements**

1. At least 12 credits must be earned at PCC, 9 of which must apply to the certificate requirements.
2. The final 9 credits that apply to the certificate must be earned at PCC; the department chair may waive this requirement if the student can demonstrate currency in the field.
3. A maximum of 12 credits of "P" (Pass) grades will apply to most One-Year Certificates. Certain CTE programs have exceptions to this requirement as stated in the requirements for the specific One-Year Certificate.
4. A maximum of 12 credits of Cooperative Education courses may be applied to a One-Year Certificate.
5. A maximum of 9 credits of 199 and 299 experimental courses may be applied to a One-Year Certificate.

Less-Than-One-Year (12-44 credits) Certificate Requirements
1. At least 6 credits must be earned at PCC, all of which must apply to the certificate requirements.
2. The final 6 credits that apply to the certificate must be earned at PCC; the department chair may waive this requirement if the student can demonstrate currency in the field.
3. A maximum of 8 credits of "P" (Pass) grades will apply to most Less-than-One-Year Certificates. Certain CTE programs have exceptions to this requirement as stated in the requirements for the specific Less-than-One-Year Certificate.
4. A maximum of 9 credits of 199 and 299 experimental courses may be applied to a Less-than-One-Year Certificate.
5. A Career Pathway Certificate is a specific type of Less-than-One-Year Certificate, consisting of courses that are wholly contained within an AAS degree, a One-Year Certificate, or a Two-Year Certificate to which the Career Pathway Certificate is linked. All requirements for the Less-Than-One-Year Certificate apply to Career Pathway Certificates.

Employment Skills Training
Some CTE departments offer the Employment Skills Training Certificate (EST). The EST is an individualized certificate ranging from 12-44 credits that prepares a student for a specific job. Students should contact the appropriate CTE department to find out whether it offers the EST. More information can be found here: http://catalog.pcc.edu/programsanddisciplines/employmentskilltraining/.

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

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. 34) 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.
# AAS Programs and Disciplines Grid

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* = Required
GENERAL EDUCATION/DISCIPLE STUDIES

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

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

PCC General Education/Discipline Studies Philosophy
The 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.

The following limitations apply to the General Education list:

1. Courses taken to satisfy the basic college competencies in composition and mathematics will not be accepted.
2. For AAS Degrees, no more than two courses may come from courses required by specific programs.*
3. When an existing course meeting a General Education requirement is expanded into a multi-course sequence with the same course number with varying suffixes (e.g., 101 becomes 101a, 101b, 101c), any course in the sequence may be used to meet the General Education requirement. However, an individual student may use only one course in the sequence toward fulfillment of the requirement, even if the student takes multiple courses in the sequence.

*Note: Because of these restrictions, it is possible that a course is acceptable as General Education for some students while it is not acceptable for others. Degree candidates who are unsure of how the General Education Policy applies to their individual cases are responsible for seeking help from an advisor or counselor.

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Science, Math, Computer Science (p. 29)
Social Sciences (p. 31)

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<td>AAOT,AS,AAS,AGS,ASOT-B</td>
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<td>ART 103</td>
<td>Understanding New Media Arts</td>
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**Science, Math, Computer Science**

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<td>PSY 222</td>
<td>Family Intimate Relationships</td>
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<td>Human Sexuality</td>
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<td>PSY 236</td>
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<td>Introduction to Abnormal Psychology</td>
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<td>SOC 205</td>
<td>Social Change in Societies</td>
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<td>SOC 206</td>
<td>Social Problems</td>
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<td>Social Issues and Movements</td>
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<td>Sociology of Gender</td>
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<td>SOC 230</td>
<td>Introduction to Gerontology</td>
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<td>SOC 231</td>
<td>Sociology of Health Aging</td>
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<td>SOC 232</td>
<td>Death and Dying: Culture and Issues</td>
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<td>WS 201</td>
<td>Intercultural Women’s Studies</td>
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<td>Women, Activism and Social Change</td>
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PROGRAMS & DISCIPLINES

Support Courses (p. 34)
Career Technical Courses (p. 34)
Lower Division Collegiate Courses (p. 34)

Support Courses
ALC: Alternative Learning Courses
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)
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 (CJA 115, 117, 230, 231, 232, 244, 245, 246, 247, 250, 253, 265)
CMET: Civil and Mechanical Engineering Technology
CTT: Computed Tomography
DA: Dental Assisting
DH: Dental Hygiene
DS: Diesel Service Technology
DST: Dealer Service Technology
DT: Dental Laboratory Technology
ECE: Early Education and Family Studies
EET: Electronic Engineering Technology
ELT: Electrical Trades
EM: Emergency Management
EMS: Emergency Medical Services
FMT: Facilities Maintenance Technology
FN: Foods and Nutrition (FN 110)
FP: Fire Protection Technology
FT: Fitness Technology
GD: Graphic Design
GRN: Gerontology
HEC: Consumer and Family Studies (HEC 157 & 201)
HIM: Health Information Management
HR: Culinary Assistant
ID: Interior Design
IMT: Industrial Maintenance Technology
INSPI: Building Inspection Technology
ITP: Sign Language Interpretation
LAT: Landscape Technology
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: Music & Sonic Arts
NRS: Nursing
OMT: Ophthalmic Medical Technology
OS: Office Systems
OST: Occupational Skills Training
PL: Paralegal
RAD: Radiography
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 BA 255)
BI: Biology **
CG: College Success and Career Guidance **
CH: Chemistry
CHLA: Chicano/Latino Studies
CHN: Chinese
CIS: Computer Information Systems (CIS 120, 121, 122)
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
FN: Foods and Nutrition (FN 225)
FR: French
G: Geology
GEO: Geography
GER: German
GS: General Science
HE: Health Studies
HEC: Consumer and Family Studies (HEC 226, 280A)
HON: Honors
HOR: Horticulture
HST: History
HUM: Humanities
INTL: International Studies
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: Religious Studies**
**RD: Reading**
**RUS: Russian**
**SJ: Social Justice**
**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.**

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**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. The Alcohol and Drug Counseling Program at Portland Community College provides students with the educational coursework and a portion of the supervised client contact hours needed to become a Certified Alcohol and Drug Counselor (CADC) in the State of Oregon through the Addiction Counselor Certification Board of Oregon (ACCBO).  

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, the Alcohol and Drug Counselor Program cannot determine in advance who is or is not employable due to their criminal history. It is commonplace for individuals with a conviction on their record to be employed in the addiction counseling profession.  

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.  

Using technology to create medical records is an important part of the Alcohol and Drug Counseling field. It is strongly recommended students have strong computer skills. Those students with few skills should consider taking CAS 100A. Those who have basic skills, but know they could improve should consider taking CAS 133. See an Alcohol and Drug Counselor Advisor for more direction in choosing the right class for you.  

Program courses are usually offered in afternoons or evenings but attendance for some Saturday courses is required. A few courses are offered via distance learning format.  

A number of four-year institutions 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

**One-Year Certificate**  
Addiction Studies

**Admission Prerequisites**

**Academic Prerequisites**

• Completion of AD 101, with a C or better.  
• Completion of LIB 101, with a C or better.  
• Completion of PSY 239, with a C or better.  
• Completion of WR 121, with a C or better.  
• Completion of WR 122 or any writing course that has WR 121 as a prerequisite, with a C or better.  
• Complete the A&D Counselor Program application.  
• After a complete application is approved, the student should schedule an advising session with a program adviser.

**Other Prerequisites**

• Documentation of not abusing alcohol or drugs for 18 months prior to admission.  

**Program Requirements**

**Academic Requirements**

• 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, MP 150 or 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.

**Other Requirements**

• 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.  
• 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 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. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program advisors for course planning.

### Alcohol and Drug Degree Courses

<table>
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<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<td>AD 102</td>
<td>Drug Use and Addiction</td>
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<td>AD 103</td>
<td>Women and Addiction</td>
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<td>AD 104</td>
<td>Multicultural Counseling</td>
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<td>AD 106</td>
<td>Smoking Cessation</td>
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<td>AD 150</td>
<td>Basic Counseling and Addiction</td>
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<td>AD 151</td>
<td>Basic Counseling Skills Mastery</td>
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<td>AD 152</td>
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<td>AD 154</td>
<td>Client Record Management and Addiction</td>
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<td>AD 155</td>
<td>Motivational Interview &amp; Addiction</td>
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<td>AD 156</td>
<td>Ethical and Professional Issues</td>
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<td>AD 157</td>
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<td>AD 184</td>
<td>Men &amp; Addiction</td>
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<td>Trauma and Recovery</td>
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<td>MP 150</td>
<td>Introduction to Electronic Health Records</td>
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<td>Alcohol and Drug Counselor Degree Electives</td>
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**Total Credits** 95

1 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

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<td>Aging &amp; Addiction</td>
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<td>AD 107</td>
<td>Addiction Recovery Mentor</td>
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<td>AD 108</td>
<td>Adolescence and Addiction</td>
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<td>Criminality and Addiction</td>
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<td>AD 110</td>
<td>Substance Abuse Prevention</td>
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<td>AD 111</td>
<td>Gambling and Addiction I</td>
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<td>MTH 105</td>
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<td>SOC 206</td>
<td>Social Problems</td>
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**Addiction Studies One-Year Certificate**

Minimum 50 credits. Students must meet all certificate requirements.

### Addiction Studies Certificate Courses

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<tr>
<td>AD 102</td>
<td>Drug Use and Addiction</td>
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<tr>
<td>AD 104</td>
<td>Multicultural Counseling</td>
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<tr>
<td>AD 106</td>
<td>Smoking Cessation</td>
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<td>3</td>
</tr>
<tr>
<td>AD 151</td>
<td>Basic Counseling Skills Mastery</td>
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<tr>
<td>AD 152</td>
<td>Group Counseling and Addiction</td>
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<td>AD 153</td>
<td>Theories of Counseling</td>
<td>3</td>
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<tr>
<td>AD 154</td>
<td>Client Record Management and Addiction</td>
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<td>AD 155</td>
<td>Motivational Interview &amp; Addiction</td>
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<td>AD 156</td>
<td>Ethical and Professional Issues</td>
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<td>AD 157</td>
<td>Motivational Interview Skills Mastery</td>
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<td>AD 255</td>
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<tr>
<td>MP 150</td>
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**Total Credits** 50

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

### American Sign Language

See Sign Language Studies (p. 169)

### Anthropology

**Cascade Campus**

Cascade Hall (CH), Room 208

971-722-5251

**Rock Creek Campus**

Building 5, Room 245

971-722-7327

**Sylvania Campus**

Social Science (SS), Room 201

971-722-4289

www.pcc.edu/programs/anthropology/

**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 three introductory courses are offered yearly. All other courses may be offered less frequently. The department suggests, but does not require that students take cultural anthropology and archaeology in sequential order.

**Apprenticeship and Trades**

Swan Island Trades Center
Room 108
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 committees outline the type of supportive courses needed to prepare students to become qualified journey persons in addition to working with related training courses.

Consult the Apprenticeship and Trades Department for assistance in program planning and transcript evaluation. It is recommended to have your graduation petition and transcript evaluation approved by an Apprenticeship and Trades 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**
Construction Trades, General Apprenticeship
Electrician Apprenticeship Technologies
Industrial Mechanics and Maintenance Technology Apprenticeship

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

**Career Pathway Certificate**
Construction Apprenticeship Technologies: Trade Worker Apprenticeship Technologies
Electrician Apprenticeship Technologies: Trade Worker Apprenticeship Technologies
Industrial Mechanics and Maintenance Technology: Trade Worker Apprenticeship Technologies

**Journey Level License Renewal**

PCC’s Apprenticeship and Trades Department is an approved training agent for continuing education for journey level 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. Note: This course may become part of a Career Pathway Certificate (CPC) and no longer a stand alone course. Contact the department for more information.

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. This class is only held periodically, please check with the department before registering.

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

**Admission Prerequisites**

**Academic Prerequisites**
- None

**Other Prerequisites**
- None

**Program Requirements**

**Academic Requirements**
- None

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

**Construction Trades, General Apprenticeship Pathway**

Construction Trades, General Apprenticeship AAS Degree (p. 38)
Construction Trades, General Apprenticeship Certificate (p. 38)
Manual Trades Apprenticeship Certificate (p. 38)
Construction Apprenticeship Technologies: Trade Worker Apprenticeship Career Pathway Certificate (p. 38)
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. 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.

4000-8000 Hour BOLI-ATD Trades

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>APR 162 § Calculations for the Trades</td>
<td>4</td>
</tr>
<tr>
<td>College credit courses for Related-Training</td>
<td>16-75</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
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<tr>
<td>Credit for Prior Certification</td>
<td>0-22</td>
</tr>
<tr>
<td>Approved Program Electives</td>
<td>0-41</td>
</tr>
<tr>
<td>Total Credits</td>
<td>90-108</td>
</tr>
</tbody>
</table>

§ Course cannot be substituted for another course.

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.

4000-8000 Hour BOLI-ATD Trades: Asbestos Removal, Carpenter, Exterior/Interior Finisher, HVAC/R, Painter, Pile Driver, Plumber, Scaffold Erector, and Sheet Metal Worker

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>College credit courses for Related-Training</td>
<td>16-99</td>
</tr>
<tr>
<td>Related Instruction §</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>

§ See related instruction list below for approved courses

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 Apprenticeship and Trades 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

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>College credit courses for Related-Training</td>
<td>16-44</td>
</tr>
<tr>
<td>Related Instruction</td>
<td>0</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>16-44</td>
</tr>
</tbody>
</table>

Construction Apprenticeship Technologies: Trade Worker Apprenticeship Career Pathway Certificate

This certificate requires a minimum of 12 credits of related classroom training. For more information, please contact the academic advisor for this program at PCC Swan Island.

4000-8000 Hour BOLI-ATD Trades

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>College credit courses for related training (core apprenticeship courses) §</td>
<td>12-44</td>
</tr>
<tr>
<td>Total Credits</td>
<td>12-44</td>
</tr>
</tbody>
</table>

§ Credits vary by trade and college requirements.

Apprenticeship Electives

Any department-approved 100 or 200 level PCC course.

Electrician Apprenticeship Technologies Pathway

Electrician Apprenticeship Technologies AAS Degree (p. 38)
Electrician Apprenticeship Technologies Certificate (p. 39)
Limited Electrician Apprenticeship Technologies Certificate (p. 39)
Electrical Apprenticeship Technologies: Trade Worker Apprenticeship Career Pathway Certificate (p. 39)

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. 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.

4000-8000 Hour BOLI-ATD Trades

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>APR 162 § Calculations for the Trades</td>
<td>4</td>
</tr>
<tr>
<td>College credit courses for Related-Training</td>
<td>16-75</td>
</tr>
<tr>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>Credit for Prior Certification</td>
<td>0-22</td>
</tr>
<tr>
<td>Approved Program Electives</td>
<td>0-41</td>
</tr>
<tr>
<td>Total Credits</td>
<td>90-108</td>
</tr>
</tbody>
</table>
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.

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

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 Apprenticeship and Trades 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

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. 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: Limited Energy Technician-License B, Limited Maintenance Electrician, Limited Renewable Energy Technician, and Limited Residential Electrician.

4000 Hour BOLI-ATD Trades
College credit courses for Related-Training 16-44

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.

The Sustainable Design Certificate provides course work from architecture, interior design, building construction, social sciences
and science as it relates to sustainable, or “green” building issues. This program will focus on creating buildings that are sited, designed, constructed, operated, and maintained for the health and well being of the occupants, while minimizing impact on the environment. It is recommended that students without prior drafting experience take ARCH 110 and ARCH 126 prior to starting this certificate.

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

Degrees and Certificates Offered

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

One-Year Certificate
Kitchen and Bath

Less than One-Year Certificate
Sustainable Design

Admissions Prerequisites

Academic Prerequisites

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

Other Prerequisites

• None

Program Requirements

Academic Requirements

• Students whose goal is to earn a degree or certificate must complete all ARCH and ID courses with a letter grade of "C" or better except ARCH 280 CE: Arch Design and Drafting which is offered only as Pass/No Pass only.

Other Requirements

• None

Associate of Applied Science Degree
Architectural Design and Drafting (p. 40)
Architectural Design and Drafting-Residential Option (p. 41)

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 58/65 competency (p. 13). 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>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
</tr>
<tr>
<td>ARCH 126</td>
<td>Introduction to AutoCAD</td>
</tr>
<tr>
<td>ARCH 127</td>
<td>Introduction to Google SketchUp</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>Residential Print Reading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 101</td>
<td>Introduction to Residential Design</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Structural Systems I</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>Residential Building Codes</td>
</tr>
<tr>
<td>ARCH 136</td>
<td>Intermediate AutoCAD</td>
</tr>
<tr>
<td>ART 215</td>
<td>History of American Residential Architecture</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 111</td>
<td>Intro to Residential Construction Documents</td>
</tr>
<tr>
<td>ARCH 162</td>
<td>Commercial Print Reading</td>
</tr>
<tr>
<td>ARCH 237</td>
<td>Introduction to Revit Architecture</td>
</tr>
<tr>
<td>ARCH 256</td>
<td>Detail Drawing with AutoCAD</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 112</td>
<td>Intro to Commercial Construction Documents</td>
</tr>
<tr>
<td>ARCH 113</td>
<td>Site Planning</td>
</tr>
<tr>
<td>ARCH 122</td>
<td>Structural Systems 2</td>
</tr>
<tr>
<td>ARCH 133</td>
<td>Commercial Building Codes</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 123</td>
<td>Structural Systems 3</td>
</tr>
<tr>
<td>ARCH 201</td>
<td>Residential Studio</td>
</tr>
<tr>
<td>ARCH Degree Electives</td>
<td>5</td>
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<table>
<thead>
<tr>
<th>Sixth Term</th>
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<tbody>
<tr>
<td>ARCH 202</td>
<td>Commercial Studio</td>
</tr>
<tr>
<td>ARCH 224</td>
<td>Active and Passive Building Systems</td>
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<td>ARCH Degree Electives</td>
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<tr>
<td>General Education</td>
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<tr>
<th>Seventh Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 203</td>
<td>Residential Renovation Studio</td>
</tr>
<tr>
<td>ARCH 280</td>
<td>Cooperative Education: Architectural Design and Drafting</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
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</table>

| Total Credits: | 99 |

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

**Architectural Design and Drafting - Residential 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 58/65 competency (p. 13). 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>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100</td>
<td>Graphic Communication for Designers 3</td>
</tr>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing 2</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems 3</td>
</tr>
<tr>
<td>ARCH 126</td>
<td>Residential Building Codes 3</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>Residential Print Reading 2</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors 3</td>
</tr>
<tr>
<td>ID 125</td>
<td>Sustainable Materials for Residential Interiors 3</td>
</tr>
<tr>
<td>ID 132</td>
<td>Planning Interiors 3</td>
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<td>ID 135</td>
<td>Professional Practices for Designers 3</td>
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<tr>
<td>ID 225</td>
<td>1</td>
</tr>
<tr>
<td>ID 238</td>
<td>Advanced Kitchen and Bath Planning 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors 3</td>
</tr>
<tr>
<td>ID 132</td>
<td>Planning Interiors 3</td>
</tr>
<tr>
<td>ID 133</td>
<td>Space Planning 3</td>
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<tr>
<td>ID 135</td>
<td>Professional Practices for Designers 3</td>
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<td>ID 225</td>
<td>1</td>
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<tr>
<td>ID 238</td>
<td>Advanced Kitchen and Bath Planning 3</td>
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<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 101</td>
<td>Introduction to Residential Design 3</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Structural Systems I 3</td>
</tr>
<tr>
<td>ARCH 256</td>
<td>Detail Drawing with AutoCAD 3</td>
</tr>
<tr>
<td>ID 138</td>
<td>Introduction to Kitchen and Bath Planning 3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Residential Electives</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 127</td>
<td>Introduction to Google SketchUp 3</td>
</tr>
<tr>
<td>ARCH 237</td>
<td>Introduction to Revit Architecture 3</td>
</tr>
<tr>
<td>ARCH 247</td>
<td>Intermediate Revit Architecture 3</td>
</tr>
<tr>
<td>BCT 108</td>
<td>Introduction to Building Science - Energy Efficient Housing 3</td>
</tr>
<tr>
<td>BCT 115</td>
<td>Introduction to Residential Greenroofing 1</td>
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<tr>
<td>BCT 116</td>
<td>Alternative Building Design 3</td>
</tr>
<tr>
<td>BCT 244</td>
<td>Kitchen and Bath Cabinet Installation 2</td>
</tr>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors 3</td>
</tr>
<tr>
<td>ID 132</td>
<td>Planning Interiors 3</td>
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<tr>
<td>ID 135</td>
<td>Professional Practices for Designers 3</td>
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<td>ID 225</td>
<td>1</td>
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<tr>
<td>ID 238</td>
<td>Advanced Kitchen and Bath Planning 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 111</td>
<td>Intro to Residential Construction Documents 3</td>
</tr>
<tr>
<td>ARCH 113</td>
<td>Site Planning 2</td>
</tr>
<tr>
<td>ARCH 122</td>
<td>Structural Systems 2 3</td>
</tr>
<tr>
<td>ARCH 224</td>
<td>Active and Passive Building Systems 4</td>
</tr>
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<td>General Education</td>
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<tr>
<th>Fifth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 201</td>
<td>Residential Studio 6</td>
</tr>
<tr>
<td>ID 236</td>
<td>Lighting Design 3</td>
</tr>
<tr>
<td>General Education</td>
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<table>
<thead>
<tr>
<th>Sixth Term</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ARCH 200</td>
<td>Principles of Architectural Design 4</td>
</tr>
</tbody>
</table>

| Total Credits: | 99 |

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

| **One-Year Certificate** | |
|--------------------------| |
| Kitchen and Bath (p. 41) | |

| **Less than One-Year Certificate** | |
|-----------------------------------| |
| Sustainable Design (p. 42)        | |

| **Kitchen and Bath One-Year Certificate** | |
|------------------------------------------| |
| Minimum 51 credits. Students must meet all certificate requirements. | |

**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>ARCH 100</td>
<td>Graphic Communication for Designers 3</td>
</tr>
<tr>
<td>ARCH 110</td>
<td>Introduction to Architectural Drawing 2</td>
</tr>
<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems 3</td>
</tr>
<tr>
<td>ARCH 126</td>
<td>Site Planning 3</td>
</tr>
<tr>
<td>ARCH 161</td>
<td>Structural Systems 2 3</td>
</tr>
<tr>
<td>ID 125</td>
<td>Computer Drafting for Interior Designers 3</td>
</tr>
<tr>
<td>ID 131</td>
<td>Introduction to Interiors 3</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 121</td>
<td>Sustainable Materials for Residential Interiors 3</td>
</tr>
<tr>
<td>ID 132</td>
<td>Planning Interiors 3</td>
</tr>
<tr>
<td>ID 133</td>
<td>Space Planning 3</td>
</tr>
<tr>
<td>ID 138</td>
<td>Introduction to Kitchen and Bath Planning 3</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 201</td>
<td>Residential Studio 6</td>
</tr>
<tr>
<td>ID 236</td>
<td>Lighting Design 3</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sixth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 200</td>
<td>Principles of Architectural Design 4</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

| Total Credits: | 99 |
Sustainable Design Less Than One-Year Certificate

Minimum 43 credits. Students must meet all certificate requirements.

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

First Term
ARCH 113 Site Planning
ARCH 134 Energy Conservation Code
ID 121 Sustainable Materials for Residential Interiors
Design and Building Electives
General Environmental Electives

Second Term
ARCH 131 Sustainable Building Strategies
ARCH 224 Active and Passive Building Systems
Design and Building Electives
General Environmental Electives

Third Term
ARCH 204 Green Residential Studio
ARCH 280 Cooperative Education: Architectural Design and Drafting
Design and Building Electives

Total Credits: 43

Design and Building Electives
ARCH 256 Detail Drawing with AutoCAD
BCT 108 Introduction to Building Science - Energy Efficient Housing
BCT 115 Introduction to Residential Greenroofing
BCT 116 Alternative Building Design
ID 236 Lighting Design
LAT 272 Sustainable Landscaping

General Environmental Electives
BI 200B Principles of Ecology: Field Biology
ESR 172 Environmental Science: Chemical Perspectives
GEO 210 The Natural Environment
PHL 206 Introduction to Environmental Ethics
SOC 228 Introduction to Environmental Sociology

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

#### Admission Prerequisites

**Academic Prerequisites**
- None

**Other Prerequisites**
- None

#### Program Requirements

**Academic Requirements**
- None

**Other Requirements**
- None

### 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.

#### 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>AB 100§</td>
<td>12</td>
</tr>
<tr>
<td>AB 105§</td>
<td>12</td>
</tr>
<tr>
<td>AB 106§</td>
<td>12</td>
</tr>
<tr>
<td>AB 201§</td>
<td>12</td>
</tr>
<tr>
<td>AB 205§</td>
<td>12</td>
</tr>
<tr>
<td>AB 280A</td>
<td>10</td>
</tr>
<tr>
<td>AB 280B</td>
<td>2</td>
</tr>
</tbody>
</table>

General Education: 4 credits

Total Credits: 72

#### Course cannot be substituted with another course.

### Auto Collision Repair Technology Two-Year Certificate

Minimum 72 credits. Students must meet all certificate requirements.

#### 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>AB 100</td>
<td>12</td>
</tr>
<tr>
<td>AB 105</td>
<td>12</td>
</tr>
<tr>
<td>AB 106</td>
<td>12</td>
</tr>
<tr>
<td>AB 201</td>
<td>12</td>
</tr>
<tr>
<td>AB 205</td>
<td>12</td>
</tr>
<tr>
<td>AB 280A</td>
<td>10</td>
</tr>
<tr>
<td>AB 280B</td>
<td>2</td>
</tr>
</tbody>
</table>

General Education: 4 credits

Total Credits: 90

### Auto Body Painting Less Than One-Year Certificate

Minimum 36 credits. Students must meet all certificate requirements.

#### 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>AB 116</td>
<td>12</td>
</tr>
<tr>
<td>AB 117</td>
<td>12</td>
</tr>
<tr>
<td>AB 118</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits: 36

### Auto Collision Repair Technology Less Than One-Year Certificate

Minimum 36 credits. Students must meet all certificate requirements.
Course of Study
The coursework listed below is required. The following is an example of a term-by-term breakdown.

**First Term**
- **AM 100**  Intro to Automotive Systems  4
- **AM 161**  Electrical Systems I  4
- **AM 111**  Engine Repair  4
- **CG 209**  Job Finding Skills  1

**Second Term**
- **AM 151**  Brakes  4
- **AM 141**  Suspension and Steering  4
- **AM 142**  Advanced Suspension, Steering and Brakes  4

**Third Term**
- **AM 162**  Electrical Systems II  4
- **AM 163**  Advanced Electrical/Electronic Systems  4
- **AM 171**  Heating & Air Conditioning Systems  4

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

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

Admission Prerequisites
Academic Prerequisites

- 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 also show computer literacy through the successful completion of CAS 133 with a grade of "C" or higher.

Other Prerequisites

- The Automotive Service Technology program accepts new students three times a year. New students must contact the PCC automotive department for advising and registration.

Program Requirements
Academic Requirements

- Students must complete each AM course with a "C" or "P" or higher in order to earn the degree or certificate.

Other Requirements

- None

Automotive Service Technology AAS Degree
Minimum 93 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). 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**
- **AM 100**  Intro to Automotive Systems  4
- **AM 161**  Electrical Systems I  4
- **AM 111**  Engine Repair  4
- **CG 209**  Job Finding Skills  1

**Second Term**
- **AM 151**  Brakes  4
- **AM 141**  Suspension and Steering  4
- **AM 142**  Advanced Suspension, Steering and Brakes  4

**Third Term**
- **AM 162**  Electrical Systems II  4
- **AM 163**  Advanced Electrical/Electronic Systems  4
- **AM 171**  Heating & Air Conditioning Systems  4

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

General Education
Fifth Term
AM 131  Manual Drive Train and Axles 4
AM 121  Automatic Transmission/Transaxle 4
AM 132  Advanced Automatic and Manual Drive Train 4
Automotive Service Technology Elective 4

Sixth Term
AM 201  Auto Shop Lab I 4
AM 202  Auto Shop Lab II 4
AM 203  Auto Shop Lab III 4
Total Credits: 93

Automotive Service Electives
AM 280A  Cooperative Education: Automotive Service 4
BA 101  Introduction to Business 4
CAS 133  Basic Computer Skills/Microsoft Office 4
CG 101  College Survival and Success: Personal Responsibility 1
CG 111A  Study Skills for College Learning 3
CG 140A  Career and Life Planning 3
COMM 130  Business & Professional Communication 4
MSD 101  Principles of Management and Supervision 3
MSD 105  Workplace Communication Skills 3
MSD 110  Gender Conflict Resolution 1
MSD 111  Workplace Correspondence 3
MSD 115  Improving Work Relations 3
MSD 117  Customer Relations 3
MSD 119A  Intercultural Communication 1
MSD 123  Job Search Strategies 1
MSD 128  Crisis Intervention: Handling the Difficult Person 1
MSD 130  Creative Problem Solving 3
WLD 136A  Beginning Wire Welding 3
WLD 156A  Beginning Oxy-Acetylene Welding Practice 3
WR 117  Introduction to Technical Writing 3
WR 227  Technical and Professional Writing 1 4

Automotive Service Technology Two-Year Certificate
Minimum 77 credits. Students must meet all 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
AM 100  Intro to Automotive Systems 4
AM 111  Engine Repair 4
AM 161  Electrical Systems I 4
CG 209  Job Finding Skills 4
Automotive Service Technology Elective 4

Second Term  Credits
AM 151  Brakes 4
AM 141  Suspension and Steering 4
AM 142  Advanced Suspension, Steering and Brakes 4

Third Term
AM 162  Electrical Suspension, Steering and Brakes 4
AM 163  Advanced Electrical/Electronic Systems 4
AM 171  Heating & Air Conditioning Systems 4

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

Fifth Term
AM 131  Manual Drive Train and Axles 4
AM 121  Automatic Transmission/Transaxle 4
AM 132  Advanced Automatic and Manual Drive Train 4

Sixth Term
AM 201  Auto Shop Lab I 4
AM 202  Auto Shop Lab II 4
AM 203  Auto Shop Lab III 4
Total Credits: 77

Automotive Service Electives
AM 280A  Cooperative Education: Automotive Service 4
BA 101  Introduction to Business 4
CAS 133  Basic Computer Skills/Microsoft Office 4
CG 101  College Survival and Success: Personal Responsibility 1
CG 111A  Study Skills for College Learning 3
CG 140A  Career and Life Planning 3
COMM 130  Business & Professional Communication 4
MSD 101  Principles of Management and Supervision 3
MSD 105  Workplace Communication Skills 3
MSD 110  Gender Conflict Resolution 1
MSD 111  Workplace Correspondence 3
MSD 115  Improving Work Relations 3
MSD 117  Customer Relations 3
MSD 119A  Intercultural Communication 1
MSD 123  Job Search Strategies 1
MSD 128  Crisis Intervention: Handling the Difficult Person 1
MSD 130  Creative Problem Solving 3
WLD 136A  Beginning Wire Welding 3
WLD 156A  Beginning Oxy-Acetylene Welding Practice 3
WR 117  Introduction to Technical Writing 3
WR 227  Technical and Professional Writing 1 4

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

Admission Prerequisites

Academic Prerequisites

For all AMT Certificates and AAS degree:

• Completion of AMT 101
• 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.

Other Prerequisites

• None

Program Requirements

Academic Requirements

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.

Other Requirements

• None

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.

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>
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<tbody>
<tr>
<td>AMT 105</td>
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<tr>
<td>AMT 106§</td>
<td>4</td>
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<tr>
<td>AMT 107§</td>
<td>4</td>
</tr>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 102§</td>
<td>4</td>
</tr>
<tr>
<td>AMT 203§</td>
<td>4</td>
</tr>
<tr>
<td>AMT 204</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 108</td>
<td>AMT Practicum/General</td>
</tr>
<tr>
<td>AMT 109</td>
<td>Assembly &amp; Rigging</td>
</tr>
<tr>
<td>AMT 208§</td>
<td>Aircraft Systems</td>
</tr>
<tr>
<td>AMT 211</td>
<td>Composite Structures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 212§</td>
<td>Sheet Metal</td>
</tr>
<tr>
<td>AMT 213§</td>
<td>Hydraulics, Pneumatics and Landing Gear</td>
</tr>
<tr>
<td>WLD 210</td>
<td>Aviation Welding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fifth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 115§</td>
<td>Aircraft Structures &amp; Inspection</td>
</tr>
<tr>
<td>AMT 117</td>
<td>Reciprocating Engine Theory &amp; Maintenance</td>
</tr>
<tr>
<td>AMT 214</td>
<td>Instruments, Communication &amp; Navigation Systems</td>
</tr>
<tr>
<td>AMT 216</td>
<td>AMT Practicum/Powerplant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sixth Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 121</td>
<td>Turbine Engine Theory and Maintenance</td>
</tr>
<tr>
<td>AMT 219</td>
<td>Turbine Engine Overhaul</td>
</tr>
<tr>
<td>AMT 222§</td>
<td>Reciprocating Engine Overhaul</td>
</tr>
</tbody>
</table>
General Education 4

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

**General Education**

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

**Total Credits:** 108

§ Course cannot be substituted for another course.

### Aviation Maintenance Technology: Airframe One-Year Certificate

Minimum 58 credits. Students must meet all certificate requirements.

**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</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>AMT 105 Aviation CFRs and Related Subjects</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 106 Aircraft Applied Science</td>
<td>4</td>
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<tr>
<td></td>
<td>AMT 107 Materials &amp; Processes</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>AMT 102 Aircraft Electricity I</td>
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<tr>
<td></td>
<td>AMT 203 Aircraft Electricity II</td>
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</tr>
<tr>
<td></td>
<td>AMT 204 Aircraft Electricity III</td>
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</tr>
<tr>
<td>Third Term</td>
<td>AMT 108 AMT Practicum/General</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>AMT 109 Assembly &amp; Rigging</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 208 Aircraft Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 211 Composite Structures</td>
<td>4</td>
</tr>
<tr>
<td>Fourth Term</td>
<td>AMT 212 Sheet Metal</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 213 Hydraulics, Pneumatics and Landing Gear</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>WLD 210 Aviation Welding</td>
<td>2</td>
</tr>
<tr>
<td>Fifth Term</td>
<td>AMT 115 Aircraft Structures &amp; Inspection</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 117 Reciprocating Engine Theory &amp; Maintenance</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 214 Instruments, Communication &amp; Navigation Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 216 AMT Practicum/Airframe</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credits:** 58

### Aviation Maintenance Technology: Powerplant One-Year Certificate

Minimum 60 credits. Students must meet all certificate requirements.

**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</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>AMT 121 Turbine Engine Theory and Maintenance</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 218 Powerplant Inspection</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 222 Reciprocating Engine Overhaul</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>AMT 120 Propellers and Engine Installation</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 123 Ignition Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 124 Fuel Metering Systems</td>
<td>4</td>
</tr>
<tr>
<td>Third Term</td>
<td>AMT 219 Turbine Engine Overhaul</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AMT 225 AMT Practicum/ Powerplant</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credits:** 92
First Term
AMT 105  Aviation CFRs and Related Subjects  4
AMT 106  Aircraft Applied Science  4
AMT 107  Materials & Processes  4

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

Third Term
AMT 108  AMT Practicum/General  2
AMT 121  Turbine Engine Theory and Maintenance  4
AMT 123  Ignition Systems  4
AMT 219  Turbine Engine Overhaul  4

Fourth Term
AMT 117  Reciprocating Engine Theory & Maintenance  4
AMT 120  Propellers and Engine Installation  4
AMT 124  Fuel Metering Systems  4

Fifth Term
AMT 218  Powerplant Inspection  4
AMT 222  Reciprocating Engine Overhaul  4
AMT 225  AMT Practicum/ Powerplant  2

Total Credits:  60

Aviation Science

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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Course of Study: Flight Instructor Option
AVS 107  Flight Preparation Lab Level 1 (3 sections)  3
AVS 125  Airplane: Private Pilot Flight  5
AVS 127  Introduction to Aviation  4
AVS 135  Airplane: Instrument Flight  4
AVS 137  Applied Aerodynamics  4
AVS 145  Introduction to Commercial Airplane  4
AVS 157  Aircraft Systems & Structures I: Airframe  3
AVS 167  Aircraft Systems: Powerplant  3
AVS 177  Pilot Human Factors and Safety Management  4
AVS 207  Flight Preparation Lab Level 2 (3 sections)  3
AVS 217  Aviation Weather Services  4
AVS 225  Airplane: Commercial Flight  4
Comprehensive Requirements and Associate of Applied Science
Minimum 90 credits. Students must also meet Associate Degree Avigation Science - Helicopter AAS Degree
should consult with program advisors for course planning.

Course of Study

Course of Study: Without Flight Instructor Option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVS 107</td>
<td>Flight Preparation Lab Level 1 (3 sections)</td>
<td>3</td>
</tr>
<tr>
<td>AVS 125</td>
<td>Airplane: Private Pilot Flight</td>
<td>5</td>
</tr>
<tr>
<td>AVS 127</td>
<td>Introduction to Aviation</td>
<td>4</td>
</tr>
<tr>
<td>AVS 135</td>
<td>Airplane: Instrument Flight</td>
<td>4</td>
</tr>
<tr>
<td>AVS 137</td>
<td>Applied Aerodynamics</td>
<td>4</td>
</tr>
<tr>
<td>AVS 145</td>
<td>Introduction to Commercial Airplane</td>
<td>4</td>
</tr>
<tr>
<td>AVS 157</td>
<td>Aircraft Systems &amp; Structures I: Airframe</td>
<td>3</td>
</tr>
<tr>
<td>AVS 167</td>
<td>Aircraft Systems: Powerplant</td>
<td>4</td>
</tr>
<tr>
<td>AVS 177</td>
<td>Pilot Human Factors and Safety Management</td>
<td>3</td>
</tr>
<tr>
<td>AVS 207</td>
<td>Flight Preparation Lab Level 2 (3 sections)</td>
<td>4</td>
</tr>
<tr>
<td>AVS 217</td>
<td>Aviation Weather Services</td>
<td>4</td>
</tr>
<tr>
<td>AVS 225</td>
<td>Airplane: Commercial Flight</td>
<td>4</td>
</tr>
<tr>
<td>AVS 227</td>
<td>Aviation Careers</td>
<td>4</td>
</tr>
<tr>
<td>AVS 237</td>
<td>Aviation Law and Regulations</td>
<td>4</td>
</tr>
<tr>
<td>AVS 255</td>
<td>Airplane: Pilot Performance</td>
<td>4</td>
</tr>
<tr>
<td>AVS 267</td>
<td>Economics of Flight Operations</td>
<td>4</td>
</tr>
<tr>
<td>GS 109</td>
<td>Physical Science (Meteorology)</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

* Could be used as General Education

Total Credits
90

Aviation Science Program Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 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>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>CG 100</td>
<td>College Survival and Success</td>
<td>3</td>
</tr>
<tr>
<td>CG 105</td>
<td>Scholarships: $$ for College</td>
<td>2</td>
</tr>
<tr>
<td>CG 111A</td>
<td>Study Skills for College Learning</td>
<td>3</td>
</tr>
<tr>
<td>CG 111B</td>
<td>Study Skills for College Learning</td>
<td>2</td>
</tr>
<tr>
<td>CG 111C</td>
<td>Study Skills for College Learning</td>
<td>1</td>
</tr>
<tr>
<td>CG 114</td>
<td>Financial Survival for College Students</td>
<td>1</td>
</tr>
<tr>
<td>CG 145</td>
<td>Stress Management</td>
<td>1</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Computer Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>EC 200</td>
<td>Introduction to Economics</td>
<td>4</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
<td>4</td>
</tr>
</tbody>
</table>

* Could be used as General Education

Navigation Science - Helicopter AAS Degree
Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science

General Education

Total Credits
90

* Could be used as General Education

Course of Study

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AVS 107</td>
<td>Flight Preparation Lab Level 1 (Two sections)</td>
<td>2</td>
</tr>
<tr>
<td>AVS 115</td>
<td>Helicopter Private Pilot Flight</td>
<td>5</td>
</tr>
<tr>
<td>AVS 127</td>
<td>Introduction to Aviation</td>
<td>4</td>
</tr>
<tr>
<td>AVS 137</td>
<td>Applied Aerodynamics</td>
<td>4</td>
</tr>
<tr>
<td>AVS 156</td>
<td>Helicopter Basic Commercial w/Instrument</td>
<td>5</td>
</tr>
<tr>
<td>AVS 157</td>
<td>Aircraft Systems &amp; Structures I: Airframe</td>
<td>3</td>
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<td>Aircraft Systems: Powerplant</td>
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<td>Flight Preparation Lab Level 2 (Two sections)</td>
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<td>AVS 216</td>
<td>Helicopter Advanced Commercial</td>
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<td>AVS 237</td>
<td>Aviation Law and Regulations</td>
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</tr>
<tr>
<td>AVS 265</td>
<td>Helicopter: CFI Flight</td>
<td>3</td>
</tr>
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<td>AVS 267</td>
<td>Economics of Flight Operations</td>
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<td>GS 109</td>
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</tr>
<tr>
<td>PHY 101</td>
<td>Fundamentals of Physics I</td>
<td>4</td>
</tr>
<tr>
<td>or PHY 201</td>
<td>General Physics</td>
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Total Credits
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</tr>
</tbody>
</table>

* Could be used as General Education
Description

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

Work in the sciences is an important part of many college programs. Courses at PCC are organized to present basic principles and to provide a coordinated overview of the sciences as they relate to living organisms.

Biology and Management of Zoo Animals

Rock Creek Campus
Building 7, Room 202
971-722-7688 or 971-722-7500
www.pcc.edu/zoo

Career and Program Description

As of Fall 2016, this program is no longer accepting new students. 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. In order to develop these skills, students in this program complete a wide variety of classroom, lab, and field coursework in animal and zoo management related areas, as well as participating in 1 year of student keeper training at the Oregon Zoo and 5 weeks of full-time experience at one of our local, national, or international partner zoological facilities.

This is a seven term, full time program. All Biology and Management of Zoo Animal courses must be taken in sequential order in the course of study below 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

Admission Prerequisites

As of Fall 2016, this program is no longer accepting new students.

Academic Prerequisites

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.
Other Prerequisites

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. Documentation of computer literacy through CAS 133, equivalent coursework or experience.

7. Documentation of computer literacy through CAS 133, equivalent coursework or experience.

8. 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.

9. 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.

Other Prerequisites

• A minimum of 20 documented hours of direct animal husbandry experience.

• 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.

Program Requirements

Academic Requirements

• None

Other Requirements

• None

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 58/65 competency (p. 13). 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

General Education (To be completed prior to taking any BMZA courses) 8
BMZA 100 Introduction to Zoo Science 2
BMZA 101 Introduction to the Biology and Management of Zoo Animals 4
BMZA 110 Animal Nutrition 4
COMM 111* Public Speaking 4
PE 181D Circuit Interval Training 1 1

Second Term

BMZA 150 Captive Population Management 4
BMZA 201 Zoo Biology & Management II - Amphibians and Reptiles 4
BMZA 280A Cooperative Education in Zoos 5
General Education 4

Third Term

BMZA 105 Comparative Vertebrate Anatomy and Physiology I 4
BMZA 202 Zoo Biology & Management II - Birds 4
BMZA 280A Cooperative Education in Zoos 5

Fourth Term

BMZA 106 Comparative Vertebrate Anatomy and Physiology II 4
BMZA 107 Zoo Horticulture 4
BMZA 280A Cooperative Education in Zoos 4

Fifth Term

BMZA 203 Zoo Biology & Management IV - Mammals 4
BMZA 231 Introduction to Animal Behavior 4
BMZA 240 Zoo Water Quality Management 2
BMZA 280A Cooperative Education in Zoos 4

Other Programs

Cooperative Education in Zoos

Zoo Horticulture

Physiology I

Comparative Vertebrate Anatomy and Physiology II

Introduction to Animal Behavior

Zoo Water Quality Management

Cooperative Education in Zoos
### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMZA 220</td>
<td>Veterinary Procedures and Treatments for Zoo Keepers</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 232</td>
<td>Zoo Animal Behavior Management</td>
<td>2</td>
</tr>
<tr>
<td>BMZA 250</td>
<td>Conservation Biology</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 265</td>
<td>Exhibit Construction, Maintenance, and Repair</td>
<td>2</td>
</tr>
</tbody>
</table>

### Seventh Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMZA 255</td>
<td>Wildlife Education Management</td>
<td>4</td>
</tr>
<tr>
<td>BMZA 260</td>
<td>Exhibit Design</td>
<td>2</td>
</tr>
<tr>
<td>BMZA 270</td>
<td>Zoological Professional Development Seminar</td>
<td>2</td>
</tr>
<tr>
<td>BMZA 280B</td>
<td>Cooperative Education: Zoological Specialty</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 103

* Could be used as General Education

## Biomedical Engineering Technology

See Electronic Engineering Technology (p. 93)

## Bioscience Technology

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

### Career and Program Description

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

Course work in the Bioscience program involves four distinct elements. Basic science courses provide the background information so that technical elements can be more completely understood. The foundation course work provides a broad base of technical knowledge that prepares individuals for entry-level positions in a variety of Bioscience companies, and includes emphasis on working in a regulated environment, as well as developing skill in technical communication and job readiness. The core of these foundation courses make up the Bioscience Technician Certificate. The advanced technical courses develop more specific skill sets, and provide for development of the fundamental skills in this more advanced context. Students may choose some electives from outside of the BIT program, in order to increase the breadth of training or focus on a specific sector of the bioscience industry. Students have the option to put their skills and knowledge into a working context through a work experience component. Certificate students must achieve an overall GPA of 2.0 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  
Advanced Bioscience Technologist

### Admission Prerequisites

#### Academic Prerequisites

- AAS Bioscience Technology: Placement into WR 121, and completion of MTH 95 with a "C" or "P" or higher.
- Bioscience Technician Certificate: Placement into WR 115, RD 115 and MTH 95.
- Advanced Bioscience Technologist Certificate: Placement into WR 121, and MTH 95.
- The Bioscience Technology program is a restricted entry program with limited enrollment. Contact the department for instructions.

#### Other Prerequisites

- None

### Program Requirements

#### Academic Requirements

- Students must achieve an overall GPA of 2.0 in order to earn the certificate.

#### Bioscience Technology AAS Degree

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). A Cooperative Education experience is not required, however, it is strongly encouraged. Students should consult with program advisors for course planning.

### Bioscience Technology Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIT 102</td>
<td>Current Topics in Bioscience Technology</td>
<td>2</td>
</tr>
<tr>
<td>BIT 105</td>
<td>Safety in the Bioscience Workplace</td>
<td>2</td>
</tr>
<tr>
<td>BIT 107</td>
<td>Bioscience Lab Math</td>
<td>2</td>
</tr>
<tr>
<td>BIT 109</td>
<td>Basic Laboratory Techniques and Instruments</td>
<td>5</td>
</tr>
<tr>
<td>BI 112*</td>
<td>Cell Biology for Health Occupations</td>
<td>3</td>
</tr>
<tr>
<td>or BI 211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIT 125</td>
<td>Quality Systems in Bioscience Technology</td>
<td>2</td>
</tr>
<tr>
<td>BIT 126</td>
<td>Applied Quality Practice</td>
<td>3</td>
</tr>
<tr>
<td>BIT 181</td>
<td>Exploring Bioscience</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
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<tr>
<td>CH 151*</td>
<td>Preparatory Chemistry</td>
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<tr>
<td>or CH 221</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
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</tbody>
</table>
Basic Science Electives
BI 121 Introduction to Human Anatomy & Physiology I 4
BI 211 Principles of Biology 5
BI 212 Principles of Biology 5
BI 213 Principles of Biology 5
BI 222 Human Genetics 3
BI 231 Human Anatomy & Physiology I 4
BI 234 Principles of Biology 5
CH 211 Introduction to Biochemistry 5
CH 221 General Chemistry I 5
CH 222 General Chemistry II 5
CH 223 General Chemistry III 5
MTH 243 Statistics I 5
MTH 244 Statistics II 5

Bioscience Degree Electives
BIT 201 Immunochemical Methods 5
BIT 203 Recombinant DNA 5
BIT 205 Bioseparations 5
BIT 207 Cell Culture 5
BIT 215 Protein Purification 5
BIT 223 Advanced DNA Techniques 5
BIT 280A Work Experience 3-8
BIT 280B Work Experience - Seminar 1
MT 108 Statistics for Process Control 2
MT 111 Electronic Circuits & Devices I 4
MT 112 Electronic Circuits & Devices II 4
MT 113 Electronic Circuits & Devices III 4
MT 121 Digital Systems I 3
MT 122 Digital Systems II 3
MT 222 Quality Control Methods in Manufacturing 3
WR 227 Technical and Professional Writing 1

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

Bioscience Technician Certificate Courses
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 3
BIT 125 Quality Systems in Bioscience Technology 2
BIT 126 Applied Quality Practice 3
BIT 181 Exploring Bioscience 3

Bioscience Technician Career Pathway Electives
BIT 201 Immunochemical Methods 5
BIT 203 Recombinant DNA 5
BIT 205 Bioseparations 5
BIT 207 Cell Culture 5
BIT 215 Protein Purification 5
BIT 223 Advanced DNA Techniques 5

Building Construction Technology
Rock Creek Campus
Building 2, Room 210
971-722-7770—General Information
971-722-7631—Design/Build Remodeling
971-722-7403 or 971-722-7328—Building Construction
971-722-7475—Construction Management
www.pcc.edu/bct
Career and Program Description

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

Building Construction Technology AAS Degree: This degree is designed to help students learn the skills a carpenter needs to build a house. Coursework includes hands-on instruction in the BCT shop, or at the BCT work site, in Tool Safety, Residential Concrete, Floor/Wall/Roof Framing, Exterior/Interior Finish, 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 even start their own construction companies. For specific courses required to complete this degree, see the term by term list under "Building Construction Technology." For students who plan to complete the degree in two years, fall term is the best time to begin, since most courses are only offered once each year. However, many students enter the program in winter, spring, or summer terms. Students who enter the program during these terms should see a BCT advisor during their first term for help in sequencing courses.

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

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

Degree and Certificates Offered

Associate of Applied Science Degree

Building Construction Technology

Building Construction Technology: Design/Build Remodeling Option

Less than One-Year Certificate

Building Construction Technology

 Admission Prerequisites

Academic Prerequisites

Prerequisites and requirements for this program are degree and certificate specific. See individual degree and certificate for prerequisite 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 grade of “C” or “P” 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.

Other Prerequisites

• None

Program Requirements

Academic Requirements

• Design Build Remodeling AAS: A “C” or better grade is required in all course work in this program option. Pass/No Pass grades are not accepted. Students must complete the coursework requirements outlined in the PCC catalog under Associates of Applied Science Degree.

Other Requirements

• None

Associate of Applied Science Degree

Building Construction Technology (p. 55)

Building Construction Technology: Design/Build Remodeling Option (p. 55)

Building Construction Technology: Construction Management Option (p. 56)
Building Construction 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. 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.

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

### First Term
- **BCT 102** Residential Printreading 3
- **BCT 103** Residential Materials and Methods 3
- **BCT 104** Construction Math 3
- **BCT 106** Hand Tool/Power Tool Use and Safety 3

General Education 4

### Second Term
- **ARCH 110** Introduction to Architectural Drawing 2
- **BCT 127** Residential Concrete 6
- **BCT 135** Residential Building Codes 2
- **COMM 215** Small Group Communication: Process and Theory 4

BCT Degree Electives 3

General Education 4

### Third Term
- **BCT 118** Introduction to Space Planning and Design 2
- **BCT 120** Floor Framing 3
- **BCT 121** Wall Framing 3
- **BCT 122** Roof Framing I 3
- **BCT 123** Roof Framing II 3

### Fourth Term
- **BCT 128** Exterior Finish 6
- **BCT 129** Mechanical Planning for Kitchens and Baths 4
- **BCT 223** Finished Stair Construction 3
- **BCT 229** Introduction to Kitchens and Baths 3

### Fifth Term
- **BCT 203** Interior Finish 6
- **BCT 219** Cabinetmaking I 6

General Education 4

### Sixth Term
- **BCT 204B** Construction Estimating - Residential 3
- **BCT 206** Sustainable Construction Practices 3
- **BCT 211** Remodeling 6
- **WR 227** Technical and Professional Writing 1 4

Total Credits: 100

* Could be used as General Education

§ Course cannot be substituted for another course

Building Construction Technology Degree Electives

- **BCT 100** Overview to the Construction Industry 3
- **BCT 105** CAD for Constructors I 3
- **BCT 108** Introduction to Building Science - Energy Efficient Housing 3
- **BCT 115** Introduction to Residential Greenroofing 1
- **BCT 116** Alternative Building Design 3
- **BCT 129** Mechanical Planning for Kitchens and Baths 4
- **BCT 130** Construction Safety 3
- **BCT 132** Computer Applications for Construction 3
- **BCT 133** Commercial Materials and Methods 3
- **BCT 134** Construction Scheduling 3
- **BCT 150** Mechanical, Electrical and Plumbing 4
- **BCT 202C** Business Principles for Construction 3
- **BCT 202D** Business Principles for Design/Build 3
- **BCT 204C** Construction Estimating - Commercial 3
- **BCT 206** Sustainable Construction Practices 3
- **BCT 213** Commercial Printreading 3
- **BCT 214** Advanced Construction Estimating 3
- **BCT 216** Cabinetry I 2
- **BCT 217** Cabinetry II 2
- **BCT 218** Woodworking Projects 2
- **BCT 220** Cabinetmaking II 6
- **BCT 221** Construction Law for the Contractor 3
- **BCT 222** Engineering for Constructors 3
- **BCT 223** Finished Stair Construction 3
- **BCT 225** Construction Project Management 3
- **BCT 226** Finish Carpentry 2
- **BCT 229** Introduction to Kitchens and Baths 2
- **BCT 244** Kitchen and Bath Cabinet Installation 2
- **BCT 280A** Cooperative Education: Building Construction 1-12
- **BCT 280C** Cooperative Education BCT Design/Build Remodeling 1-5

Design/Build Remodeling AAS Degree

Minimum 105 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.

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

### First Term
- **BCT 102** Residential Printreading 3
- **BCT 103** Residential Materials and Methods 3
- **BCT 104** Construction Math 3
- **BCT 106** Hand Tool/Power Tool Use and Safety 3
- **BCT 135** Residential Building Codes 2

General Education 4
### Second Term
- **ARCH 110** Introduction to Architectural Drawing 2
- **BCT 127** Residential Concrete 6
- **COMM 215** Small Group Communication: Process and Theory 4

**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** CAD for Constructors I 3

**General Education**

### Third Term
- **BCT 118** Introduction to Space Planning and Design 2
- **BCT 120** Floor Framing 3
- **BCT 121** Wall Framing 3
- **BCT 122** Roof Framing I 3

**BCT CAD Electives**

**General Education**

### Fourth Term
- **BCT 133** Commercial Materials and Methods 3
- **BCT 136** Commercial Building Codes 2
- **BCT 221** Construction Law for the Contractor 3

**BCT CAD Electives**

**BCT COMM Electives**

**Fourth Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<tbody>
<tr>
<td>4</td>
<td>WR 227 Technical and Professional Writing 1</td>
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<td>BCT Computer App Electives ²</td>
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**Fifth Term

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<tr>
<th>Credits</th>
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<tr>
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<td>BCT 204C Construction Estimating - Commercial</td>
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<tr>
<td>3</td>
<td>BCT 206 Sustainable Construction Practices</td>
</tr>
<tr>
<td>3</td>
<td>BCT 222 Engineering for Constructors</td>
</tr>
<tr>
<td>3</td>
<td>or ARCH 122Structural Systems 2</td>
</tr>
<tr>
<td>3</td>
<td>BCT Computer App Electives ²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<td>4</td>
<td>General Education</td>
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### Sixth Term

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

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>General Education</td>
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</tbody>
</table>

### Seventh Term

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

**Total Credits:** 94

* Could be used as General Education

§ Course cannot be substituted with 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.

**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>Credits</th>
<th>Course</th>
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<tbody>
<tr>
<td>3</td>
<td>BCT 100 Overview to the Construction Industry</td>
</tr>
<tr>
<td>3</td>
<td>BCT 102 Residential Printreading</td>
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<tr>
<td>3</td>
<td>BCT 103 Residential Materials and Methods</td>
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<td>BCT 104 Construction Math</td>
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General Education

### Second Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<tr>
<td>2</td>
<td>ARCH 110 Introduction to Architectural Drawing</td>
</tr>
<tr>
<td>3</td>
<td>BCT 134 Construction Scheduling</td>
</tr>
<tr>
<td>2</td>
<td>BCT 135 Residential Building Codes</td>
</tr>
<tr>
<td>3</td>
<td>BCT 202C Business Principles for Construction</td>
</tr>
<tr>
<td>3</td>
<td>BCT CAD Electives</td>
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</tbody>
</table>

### Third Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<tbody>
<tr>
<td>3</td>
<td>BCT 133 Commercial Materials and Methods</td>
</tr>
<tr>
<td>2</td>
<td>BCT 136 Commercial Building Codes</td>
</tr>
<tr>
<td>3</td>
<td>BCT 221 Construction Law for the Contractor</td>
</tr>
<tr>
<td>3</td>
<td>BCT CAD Electives</td>
</tr>
<tr>
<td>3</td>
<td>BCT COMM Electives</td>
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### Fourth Term

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

### Fifth Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<tbody>
<tr>
<td>3</td>
<td>BCT 204C Construction Estimating - Commercial</td>
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<tr>
<td>3</td>
<td>BCT 206 Sustainable Construction Practices</td>
</tr>
<tr>
<td>3</td>
<td>BCT 222 Engineering for Constructors</td>
</tr>
<tr>
<td>3</td>
<td>or ARCH 122Structural Systems 2</td>
</tr>
<tr>
<td>3</td>
<td>BCT Computer App Electives ²</td>
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<th>Credits</th>
<th>Course</th>
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</thead>
<tbody>
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<td>General Education</td>
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### Sixth Term

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

<table>
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<th>Credits</th>
<th>Course</th>
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### Seventh Term

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

**Total Credits:** 94

* Could be used as General Education

§ Course cannot be substituted for another course.

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

² CAS 171 may be substituted for CAS 170

³ 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**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>ARCH 126 Introduction to AutoCAD</td>
</tr>
<tr>
<td>3</td>
<td>ARCH 127 Introduction to Google SketchUp</td>
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<tr>
<td>3</td>
<td>ARCH 136 Intermediate AutoCAD</td>
</tr>
<tr>
<td>3</td>
<td>ARCH 237 Introduction to Revit Architecture</td>
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<tr>
<td>3</td>
<td>ARCH 247 Intermediate Revit Architecture</td>
</tr>
<tr>
<td>3</td>
<td>BCT 105 CAD for Constructors I</td>
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</tbody>
</table>
BCT 209  CAD for Constructors II

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

BCT Computer Application Electives
CAS 133  Basic Computer Skills/Microsoft Office
CAS 140  Beginning Access
CAS 170  Beginning Excel
CAS 171  Intermediate Excel
CAS 220  Project Management - Beginning MS Project

Building Construction Technology Less Than One-Year Certificate
Minimum 37 credits. Students must meet all certificate requirements.

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

First Term
BCT 102  Residential Printreading
BCT 103  Residential Materials and Methods
BCT 104  Construction Math
BCT 106  Hand Tool/Power Tool Use and Safety

Credits: 3

Second Term
ARCH 110  Introduction to Architectural Drawing
BCT 127  Residential Concrete
BCT 135  Residential Building Codes

Credits: 2

BCT Degree Electives
BCT 120  Floor Framing
BCT 121  Wall Framing
BCT 122  Roof Framing I
BCT 123  Roof Framing II

Credits: 3

Total Credits: 37

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

Credits: 3 3 3 3 3 2 3 2 3 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3

Building Inspection Technology
Sylvania Campus
Science Technology, Room 200
971-722-4166

www.pcc.edu/programs/building-inspection/

Career and Program Description
PCC's Building Inspection Technology program provides a diverse set of skills, enabling students to begin a career working in governmental jurisdictions or private industry, as a Building Inspector or Plans Examiner position. The degree in Building Inspections Technology trains for work in building inspections and plan review, for both residential and commercial buildings. The Certificate in Residential Plans Examination trains for work in residential inspection and plan review; ideally for someone with some construction background. (Please note, the Certificate does not provide training as a home inspector, who typically is part of a real estate transaction).

The Building Inspection Technology (INSP) program is delivered by experts currently working in the field. Students develop and apply basic understanding of concepts, theories, and principles of construction and building codes with both a residential and commercial focus. A broad curriculum including:

- construction materials and processes
- printreading
- building systems
- building structures
- residential and commercial building codes
- residential and commercial plans review

in addition to courses in:

- interpersonal communication
- computers
- mathematics
• job finding skills

Also, cooperative work experience (internship) at a local city or county building department prepares students for a career in building inspection and/or plan review. Graduates may find employment in public and private code enforcement agencies, construction firms, engineering or architectural firms, and other related industries.

PCC is the only college in Oregon to offer career and technical training in Building Inspections Technology. All INSP classes are offered in the evening on the Sylvania campus and a few courses are offered in an online format. There is no online only option. For more information or availability of individual courses please contact the department advisor, at 971-722-4166. Students who wish to transfer to a college or university to obtain a bachelor’s degree should check with the specific institution for transferability.

**Degrees and Certificates Offered**

**Associate of Applied Science Degree**

Building Inspection Technology

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

Residential Plans Examination

**Admission Prerequisites**

**Academic Prerequisites**

• None

**Other Prerequisites**

• None

**Program Requirements**

**Academic Requirements**

• All ARCH and INSP courses must be completed with a letter grade of "C" or better. INSP 280 is excluded from this requirement because it is offered as Pass/No Pass only.

**Other Requirements**

• None

**Building Inspection 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. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Building Inspection Technology Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ARCH 121</td>
<td>Structural Systems I</td>
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<td>ARCH 122</td>
<td>Structural Systems 2</td>
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<td>ARCH 123</td>
<td>Structural Systems 3</td>
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<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 132</td>
<td>Residential Building Codes</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 134</td>
<td>Energy Conservation Code</td>
<td>2</td>
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<tr>
<td>ARCH 161</td>
<td>Residential Print Reading</td>
<td></td>
</tr>
<tr>
<td>ARCH 162</td>
<td>Commercial Print Reading</td>
<td></td>
</tr>
<tr>
<td>CG 209</td>
<td>Job Finding Skills</td>
<td></td>
</tr>
<tr>
<td>COMM 140 *</td>
<td>Introduction to Intercultural Communication</td>
<td>4</td>
</tr>
<tr>
<td>INS 126</td>
<td>Plan Review Software</td>
<td></td>
</tr>
<tr>
<td>INS 151</td>
<td>International Residential Code Structural 1</td>
<td>4</td>
</tr>
<tr>
<td>INS 152</td>
<td>International Residential Code Mechanical</td>
<td>2</td>
</tr>
<tr>
<td>INS 251</td>
<td>International Building Code I</td>
<td></td>
</tr>
<tr>
<td>INS 252</td>
<td>International Building Code II</td>
<td></td>
</tr>
<tr>
<td>INS 253</td>
<td>International Building Code III</td>
<td></td>
</tr>
<tr>
<td>INS 255</td>
<td>International Mechanical Code I</td>
<td></td>
</tr>
<tr>
<td>INS 256</td>
<td>International Mechanical Code II</td>
<td></td>
</tr>
<tr>
<td>INS 280</td>
<td>CE: Field Experience Inspection</td>
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<tr>
<td>INS/ARCH Electives</td>
<td></td>
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<td>COMM/MSD Electives</td>
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</table>

* Could be used for general education.

**Building Inspection/Architecture Electives**

<table>
<thead>
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<th>Course Title</th>
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<tbody>
<tr>
<td>ARCH 131</td>
<td>Sustainable Building Strategies</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 133</td>
<td>Commercial Building Codes</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 224</td>
<td>Active and Passive Building Systems</td>
<td>4</td>
</tr>
<tr>
<td>INS 201</td>
<td>Plans Examination-Commercial</td>
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<tr>
<td>INS 202</td>
<td>Plans Examination-Residential</td>
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<tr>
<td>INS 220</td>
<td>International Building Code Fire and Life Safety</td>
<td>3</td>
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<td>INS 257</td>
<td>International Fuel-Gas Code</td>
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**Communication/MSD Electives**

<table>
<thead>
<tr>
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<th>Course Title</th>
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</thead>
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<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
<td>4</td>
</tr>
<tr>
<td>COMM 237</td>
<td>Gender and Communication</td>
<td>4</td>
</tr>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 117</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 128</td>
<td>Crisis Intervention: Handling the Difficult Person</td>
<td>1</td>
</tr>
<tr>
<td>MSD 150</td>
<td>Listening Skills</td>
<td>1</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>
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<tr>
<td>MSD 161</td>
<td>Customer Relations</td>
<td>1</td>
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</tbody>
</table>

**Residential Plans Examination Less than One-Year: Career Pathway Certificate**

Minimum 42 credits. Students must meet all certificate requirements. The Residential Plans Examination certificate is a career pathway. All courses are contained in the Building Inspection Technology AAS Degree.

**Residential Plans Examination Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ARCH 121</td>
<td>Structural Systems I</td>
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<td>ARCH 122</td>
<td>Structural Systems 2</td>
<td>3</td>
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<tr>
<td>ARCH 123</td>
<td>Structural Systems 3</td>
<td>3</td>
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<tr>
<td>ARCH 124</td>
<td>Introduction to Building Systems</td>
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<tr>
<td>ARCH 132</td>
<td>Residential Building Codes</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
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</tr>
<tr>
<td>ARCH 161</td>
<td>Residential Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>CG 209</td>
<td>Job Finding Skills</td>
<td>1</td>
</tr>
<tr>
<td>COMM 140</td>
<td>Introduction to Intercultural Communication</td>
<td>4</td>
</tr>
<tr>
<td>INSP 151</td>
<td>International Residential Code Structural 1</td>
<td>4</td>
</tr>
<tr>
<td>INSP 152</td>
<td>International Residential Code Mechanical</td>
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</tr>
<tr>
<td>INSP 202</td>
<td>Plans Examination-Residential</td>
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<td>INSP 280</td>
<td>CE: Field Experience Inspection</td>
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<tr>
<td>COMM/MSD Electives</td>
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<tr>
<td>Total Credits</td>
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**Communication/MSD Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
<td>4</td>
</tr>
<tr>
<td>COMM 237</td>
<td>Gender and Communication</td>
<td>4</td>
</tr>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 117</td>
<td>Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 128</td>
<td>Crisis Intervention: Handling the Difficult Person</td>
<td>1</td>
</tr>
<tr>
<td>MSD 150</td>
<td>Listening Skills</td>
<td>1</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 161</td>
<td>Customer Relations</td>
<td>1</td>
</tr>
</tbody>
</table>

**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
SCOM 214
971-722-6147

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

www.pcc.edu/programs/business

**Career and Program Description**

Three associate of applied science degrees in business administration are offered. They are: Accounting, Management, and Marketing. 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. 12) 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
Marketing

**One-Year Certificate**

Accounting Clerk
Marketing

**Less than One-Year Certificate**

Accelerated Accounting

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

Entry-Level Accounting Clerk
Retail Sales and Service

**Admission Prerequisites**

**Academic Prerequisites**

- None

**Other Prerequisites**

- None

**Program Requirements**

**Academic Requirements**

- None

**Other Requirements**

- None

**Associate of Applied Science Degree**

Accounting (p. 59)
Management (p. 60)
Marketing (p. 60)

**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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Accounting Degree Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 131</td>
<td>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>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>BA 240</td>
<td>Nonprofit Financial Management and Accounting</td>
<td>3</td>
</tr>
<tr>
<td>or BA 242</td>
<td>Introduction to Investments</td>
<td>3</td>
</tr>
<tr>
<td>BA 256</td>
<td>Income Tax</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 217</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>or EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
<td>4</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
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</table>

Choose one of the following:

- PHL 202 \* Ethics
- PHL 209 \* Business Ethics
- BA 277 Business Practices and Contemporary Social Issues

- WR 121 English Composition

**Business Program Electives (see list below)**

**Remaining General Education**

**Total Credits**

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>92</td>
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</tbody>
</table>

\* 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 electives follow at the end of the Business Administration section.

### 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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

### Management Degree Courses

- BA 101 Introduction to Business
- BA 111 \1 Introduction to Accounting
- BA 131 Introduction to Business Technology
- BA 205 Business Communication Using Technology
- BA 206 Management Fundamentals
- BA 211 Principles of Accounting I
- BA 212 Principles of Accounting II
- BA 223 Principles of Marketing
- BA 224 Human Resource Management
- BA 226 Business Law I
- BA 285 Human Relations-Organizations
- CAS 121 Beginning Keyboarding
- or CAS 122 Keyboarding for Speed and Accuracy

### Management Support Electives

- CAS 109 Beginning PowerPoint
- CAS 111D Beginning Website Creation: Dreamweaver
- CAS 140 Beginning Access
- CAS 171 Intermediate Excel
- CAS 217 Intermediate Word
- CAS 231 Publisher
- OS 240 Filing and Records Management

### Marketing 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

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

- Complete 12 BA Credits before enrolling.

### Marketing AAS Degree Requirements

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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Marketing Degree Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 101</td>
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<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 234</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 235</td>
<td>Social Media Marketing</td>
<td>4</td>
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<tr>
<td>BA 236</td>
<td>Product Management and Branding</td>
<td>4</td>
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<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>
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<tr>
<td>BA 280A</td>
<td>Cooperative Education: Business Experience</td>
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<td>BA 280B</td>
<td>Cooperative Education: Business Experience - Seminar</td>
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<tr>
<td>BA 289</td>
<td>Marketing Capstone</td>
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<tr>
<td>CAS 110</td>
<td>Introduction to Web Graphics</td>
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Choose one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAS 111W</td>
<td>Beginning Website Design: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of HTML and CSS</td>
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<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>COMM 111*</td>
<td>Public Speaking</td>
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<tr>
<td>WR 121</td>
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<td>WR 122</td>
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Choose one of the following:

<table>
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<tr>
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<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<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 215</td>
<td>Basic Cost Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 218</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>BA 222</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 227</td>
<td>Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>BA 234</td>
<td>International Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 235</td>
<td>Social Media Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 237</td>
<td>Fundamentals of Import/Export</td>
<td>3</td>
</tr>
<tr>
<td>BA 238</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BA 249</td>
<td>Principles of Retailing and E-tailing</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
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<td>BA 255</td>
<td>Project Management - Business Environments</td>
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<tr>
<td>BA 280A</td>
<td>Cooperative Education: Business Experience</td>
<td>1-6</td>
</tr>
<tr>
<td>BA 281</td>
<td>Accounting Skills Review</td>
<td>1</td>
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<td>BA 285</td>
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</tr>
<tr>
<td>BA 290</td>
<td>Basic Income Tax Preparation</td>
<td>8</td>
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<td>BA 9235</td>
<td>Financial Statement Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>CAS 109</td>
<td>Beginning PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 121</td>
<td>Beginning Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS 123</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
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<td>CAS 246</td>
<td>Integrated Computer Projects</td>
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<td>OS 131</td>
<td>10-key on Calculators</td>
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<td>OS 240</td>
<td>Filing and Records Management</td>
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**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 111</td>
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<td>BA 177</td>
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<tr>
<td>BA 203</td>
<td>Introduction to International Business</td>
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<td>Introduction to E-Commerce</td>
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<td>BA 209</td>
<td>Introduction to Grant Writing</td>
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</table>

* Could be used as General Education.

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

**One-Year Certificate**
Accounting Clerk (p. 62)
Marketing (p. 62)

**Less than One-Year Certificate**
Accelerated Accounting (p. 62)

**Less than One-Year: Career Pathway Certificate**
Entry-Level Accounting Clerk (p. 63)
Retail Sales and Service (p. 63)

**Accounting Clerk One-Year Certificate**
Minimum 48 credits. Students must meet all certificate requirements.

**Accounting Clerk Certificate Courses**

<table>
<thead>
<tr>
<th>Course</th>
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<td>BA 211</td>
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<td>BA 212</td>
<td>Principles of Accounting II</td>
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<td>BA 228</td>
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<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
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</tr>
<tr>
<td>CAS 121</td>
<td>Beginning Keyboarding</td>
<td></td>
</tr>
<tr>
<td>or CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td></td>
</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
<td></td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
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</table>

**Accounting Clerk CAS Electives**

**Accounting Clerk Economics Electives**

**Business Program Electives (see list below)**

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.
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**

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**Accounting Clerk Economics Electives**

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**Marketing One-Year Certificate**
Minimum 46 credits. Students must meet all certificate requirements.

**Marketing Certificate Courses**

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<td>BA 111</td>
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<td>BA 205</td>
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<td>BA 235</td>
<td>Social Media Marketing</td>
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<td>BA 280A</td>
<td>Cooperative Education: Business Experience</td>
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<td>BA 280B</td>
<td>Cooperative Education: Business Experience - Seminar</td>
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<tr>
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<tr>
<td>WR 121</td>
<td>English Composition</td>
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</table>

**Business Program Electives (see list below)**

Total Credits 46

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

**Accelerated Accounting Less Than One-Year Certificate**
Minimum 29 credits. Students must meet all certificate requirements.

**Accelerated Accounting Certificate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<td>BA 177</td>
<td>Payroll Accounting</td>
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<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
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<td>BA 228</td>
<td>Computer Accounting Applications</td>
<td></td>
</tr>
<tr>
<td>CAS 121</td>
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</tr>
<tr>
<td>or CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
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<tr>
<td>OS 131</td>
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<td>WR 115</td>
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<td>WR 121</td>
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Choose one of the following:

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<tr>
<td>WR 121</td>
<td>English Composition</td>
<td></td>
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</tbody>
</table>

**Business Program Electives (see list below)**

Total Credits 29
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.

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

Business Program Electives (p. 63)

**Entry-Level Accounting Clerk: Career Pathway Certificate**

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

**Entry-Level Accounting Clerk Courses**

<table>
<thead>
<tr>
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<th>Credits</th>
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<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
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<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
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<td>BA 224</td>
<td>Human Resource Management</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>BA 249</td>
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<td>BA 250</td>
<td>Small Business Management</td>
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<tr>
<td>CAS 122</td>
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<td>CAS 123</td>
<td>Production Keyboarding</td>
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</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
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<tr>
<td>OS 240</td>
<td>Filing and Records Management</td>
<td>4</td>
</tr>
</tbody>
</table>

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

**Retail Sales and Service**

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

**Retail Sales and Service Certificate Courses**

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<tr>
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<td>BA 280B</td>
<td>Cooperative Education: Business Experience - Seminar</td>
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<td>BA 285</td>
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<tr>
<td>BA 287</td>
<td>Basic Income Tax Preparation</td>
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<tr>
<td>BA 9235</td>
<td>Financial Statement Analysis I</td>
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<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
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<td>CAS 121</td>
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</tr>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
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<td>Production Keyboarding</td>
<td>3</td>
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<tr>
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<tr>
<td>CAS 140</td>
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**Chemistry**

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 (ST), Room 312
971-722-4174

www.pcc.edu/programs/chemistry/

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

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

Chicano/Latino Studies
Rock Creek Campus
Building 5, Room 245
971-722-7235

www.pcc.edu/programs/chicano-latino-studies/

Description
Chicano/Latino Studies is the interdisciplinary study of the historical, social, cultural, political and economic forces that have shaped and continue to shape the development of Americans of Latino origins and ancestry over the last 500 years. People of Chicano/Latino origin include a diverse population; these are communities who trace their ancestry to Mexico, Central America, South America and the Caribbean. This program’s focus is on people of Latin American descent within the hemisphere, in particular within the United States. Courses in Chicano/Latino studies take into account the intersections of race, ethnicity, class, gender and sexuality and how they affect the lives of Chicano/Latino people. The emphasis in these courses is on the experience of the Chicano/Mexican-American and other Latinos as residents and citizens of the United States and not in their countries of origin or descent.

The curriculum in Chicano/Latino studies provides a critical engagement, understanding and appreciation of the language, culture, literature, and creative (art, dance, drama, film, music) accomplishments of Chicano/Latino communities. Chicano/Latino studies contribute to many fields, and are appropriate for anyone planning to work with diverse communities and cultures. Chicano/Latino studies draw from and are informed by the humanities and social sciences, and prepare students for professional programs such as education, social work, medicine and law.

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 adviser for additional information and guidance.

Chinese
Cascade Campus
Cascade Hall (CH), Room 208
971-722-5251

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

www.pcc.edu/programs/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 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.

Civil Engineering Technology
Sylvania Campus
Science Technology Building (ST), Room 200
971-722-4159

www.pcc.edu/cet

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

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

Two-Year Certificate
Civil Engineering Technology

Admission Prerequisites

Academic Prerequisites

• 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:
  • WR 115 or equivalent placement test score.
  • MTH 60 or higher, or equivalent placement test score.

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

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

• 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.

Other Prerequisites

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

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

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

Program Requirements

Academic Requirements

• None

Other Requirements

• None

Associate of Applied Science Degree
Civil Engineering Technology (p. 65)
Civil Engineering Technology: Green Technology and Sustainability Option (p. 66)

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.

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>
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</tr>
<tr>
<td>CMET 111</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 102</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Second Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 121</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123§</td>
<td>4</td>
</tr>
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<td>WR 121</td>
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<table>
<thead>
<tr>
<th>Third Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 131</td>
<td>8</td>
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<tr>
<td>CMET 213</td>
<td>3</td>
</tr>
<tr>
<td>CMET 227</td>
<td>2</td>
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</table>

| General Education   | 4       |

<table>
<thead>
<tr>
<th>Fourth Term</th>
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</thead>
<tbody>
<tr>
<td>CH 101*</td>
<td>5</td>
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<tr>
<td>CMET 133</td>
<td>3</td>
</tr>
<tr>
<td>CMET 221</td>
<td>3</td>
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</table>
**Civil Engineering Technology Two-Year Certificate**

Minimum 67 credits. Students must also meet certificate requirements.

### Course of Study

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td><strong>First Term</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CMET 110</td>
<td>Statics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CMET 111</td>
<td>Portland Design: Brews, Bridges and Bikes</td>
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<tr>
<td></td>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
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</tr>
<tr>
<td></td>
<td>ENGR 102</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Second Term</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CMET 121</td>
<td>Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CMET 122</td>
<td>Global Energy Physics</td>
<td>4</td>
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<td></td>
<td>CMET 123</td>
<td>Technical Algebra with Analytic Geometry</td>
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<td>WR 121</td>
<td>English Composition</td>
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<td><strong>Third Term</strong></td>
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<tr>
<td></td>
<td>CMET 131</td>
<td>Applied Calculus</td>
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<td></td>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
<td>3</td>
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<td></td>
<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
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<tr>
<td></td>
<td>CMET Human Relations Electives</td>
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<tr>
<td></td>
<td>CH 101</td>
<td>Inorganic Chemistry Principles</td>
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<tr>
<td></td>
<td>CMET 133</td>
<td>Materials Technology</td>
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<td>CMET 221</td>
<td>Environmental Quality</td>
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<td>Thermodynamics II</td>
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<td>CMET 223</td>
<td>Project Management</td>
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<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
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<tr>
<td></td>
<td>CMET 228</td>
<td>Construction Materials</td>
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<td></td>
<td>CMET 233</td>
<td>CET Applied Computer Aided Design</td>
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<td>CMET 236</td>
<td>Structural Design</td>
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<tr>
<td></td>
<td>ENGR 226</td>
<td>Plane Surveying</td>
<td>4</td>
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<tr>
<td></td>
<td>Total Credits</td>
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<td>67</td>
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</table>

### Green Technology and Sustainability Degree Courses

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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>Statics</td>
<td>4</td>
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<tr>
<td>CMET 111</td>
<td>Portland Design: Brews, Bridges and Bikes</td>
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<tr>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
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<tr>
<td>ENGR 102</td>
<td>Engineering Graphics</td>
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<td>CMET 121</td>
<td>Strength of Materials</td>
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<td>Technical Algebra with Analytic Geometry</td>
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<td>Applied Calculus</td>
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<td>CMET 213</td>
<td>Fluid Mechanics</td>
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<td>CMET Human Relations Electives</td>
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<td>CH 101</td>
<td>Inorganic Chemistry Principles</td>
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<td>CMET 228</td>
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<td>CMET 233</td>
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<td>CMET 236</td>
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<td>ENGR 226</td>
<td>Plane Surveying</td>
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<tr>
<td>Total Credits</td>
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### CMET Human Relations Electives

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>CG 191</td>
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<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
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</tr>
<tr>
<td>PSY 201A</td>
<td>Introduction to Psychology - Part 1</td>
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<tr>
<td>PSY 202A</td>
<td>Introduction to Psychology - Part 2</td>
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</tr>
</tbody>
</table>
**College Success and Career Guidance**

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

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

Southeast Campus  
Student Commons (SCOM), Room 116  
971-722-6240

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

www.pcc.edu/programs/cg

**Description**

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

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

**Communication Studies**

4  
Cascade Campus  
Cascade Hall (CH), Room 306  
971-722-5251

4  
Rock Creek Campus  
Building 5, Room 245  
971-722-7327*

4  
Southeast Campus  
Mt. Scott Hall (MSH), Room 103  
971-722-6146

4  
Sylvania Campus  
Communications Technology Building (CT), Room 216  
971-722-4264**

*contact for Hillsboro Center  
**contact for Newberg Center

www.pcc.edu/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 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)**

Southeast Campus  
Student Commons (SCOM), Room 214  
971-722-6031

www.pcc.edu/drafting

**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)**

#### Admission Prerequisites

**Academic Prerequisites**

- 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.

**Other Prerequisites**

- 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.

#### Program Requirements

**Academic Requirements**

- Students must receive a grade of "C" or "P" 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.

**Other Requirements**

- None

#### Computer Aided Design and Drafting Less Than One-Year Certificate

Minimum 42 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.

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
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<td>CADD 136</td>
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<td>CADD 160</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>CADD 165</td>
<td>Intermediate Drafting 4</td>
</tr>
<tr>
<td>CADD 175</td>
<td>SolidWorks Fundamentals 3</td>
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<td>CADD 185</td>
<td>Inventor Fundamentals 3</td>
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<tr>
<td>CADD 246</td>
<td>AutoCAD 3-D and Solid Modeling 3</td>
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<table>
<thead>
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<th>Third Term</th>
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<tbody>
<tr>
<td>CADD 255</td>
<td>Kinematics Drafting 3</td>
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<td>CADD 256</td>
<td>Advanced AutoCAD 3</td>
</tr>
<tr>
<td>CADD 265</td>
<td>Advanced Drafting 4</td>
</tr>
<tr>
<td>CADD 275</td>
<td>SolidWorks Advanced 3</td>
</tr>
<tr>
<td>CADD 285</td>
<td>Advanced Inventor 3</td>
</tr>
</tbody>
</table>

**Total Credits:** 42

### 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](http://www.pcc.edu/cas)

### Career and Program Description

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

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

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

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

**Administrative Assistant**: An administrative assistant possesses advanced knowledge of popular software applications, excellent communication, and interpersonal skills. An administrative assistant is prepared to make decisions, set priorities, and establish work flow. Students who successfully complete the Administrative Assistant
Degree will develop skills and knowledge appropriate to an entry-level office position as an administrative assistant. The program emphasis is on using business software, communications, Internet, and emerging technologies.

**Administrative Office Professional:** An administrative office professional coordinates various office support services and frequently supervises office support staff. This professional also establishes short range and long range plans for the office. This degree requires excellent communication and organizational skills. Students who successfully complete the Administrative Office Professional degree will develop skills and knowledge appropriate to an entry-level office position as an administrative assistant leading to managerial responsibilities. This is a statewide program that provides connected instruction and a pathway for completion between participating Oregon community colleges. Students may start at any participating college but transfer and complete credits at any appropriate college.

**Website Development and Design:** The field of Website Development and Design represents a rapidly growing career and technology segment of industry. This program prepares students to create and support websites using current industry standards and technology. Students will plan, create, manage, and market web-based business operations, products, and services. These skills are transferable to a wide variety of web-related careers. This interdisciplinary AAS degree combines back-end programming and development skills with front-end design skills to prepare students for a wide variety of web-related careers. Furthermore, students in this program will learn the designing, implementing, testing, and troubleshooting skills needed for website maintenance and development.

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

- Design
- Development
- Business
- Video

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.

**Degrees and Certificates Offered**

**Associate of Applied Science Degree**

Administrative Assistant

**Administrative Office Professional Website Development and Design**

**One-Year Certificate**

**Administrative Assistant**

**Website Development and Design**

**Less than One-Year Certificate**

**Virtual Specialist**

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

**Administrative Assistant: Administrative Support**

**Administrative Assistant: Business Office Assistant**

**Administrative Assistant: Computer Software Fundamentals**

**Website Development and Design Certificate: Web Assistant I**

**Website Development and Design Certificate: Web Assistant II**

**Admission Prerequisites**

**Academic Prerequisites**

- All programs of study in CAS/OS recommend placement in WR 115, RD 115, MTH 20 and keyboarding by touch or CAS 121. Additional skill requirements are specified in course descriptions. Placement examinations to assist students in selecting appropriate writing and mathematics courses are required prior to registration.

**Other Prerequisites**

- Students with questions about entry-level readiness should arrange to meet with a department advisor.

**Program Requirements**

**Academic Requirements**

- All courses in the degrees and certificates within the CAS/OS program must be completed with a grade of "C" or "P" or better.
- Students must meet PCC's writing and math competencies prior to graduation. See academic requirements in this catalog.

**Other Requirements**

- None

**Associate of Applied Science Degree**

Administrative Assistant (p. 69)

Administrative Office Professional (p. 70)

Website Development and Design (p. 70)

**Administrative Assistant AAS Degree**

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. 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 Assistant Degree Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 111 $</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 205</td>
<td>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>BA 177</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>or BA 228</td>
<td>Computer Accounting Applications</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>CAS 109</td>
<td>Beginning PowerPoint</td>
<td>1</td>
</tr>
<tr>
<td>CAS 123</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office (or Admin Asst Degree Electives)</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 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 176</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 177</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>OS 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>OS 240</td>
<td>Filing and Records Management</td>
<td>4</td>
</tr>
<tr>
<td>OS 245</td>
<td>Office Systems and Procedures</td>
<td>4</td>
</tr>
<tr>
<td>OS 280F</td>
<td>Cooperative Education: Administrative Assistant</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Admin Asst Business Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Admin Asst Degree Electives</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>94</td>
</tr>
</tbody>
</table>

§ Course cannot be substituted for another course.

**Administrative Assistant Business Electives**

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

**Administrative Assistant Degree Electives**

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

**Administrative Office Professional AAS Degree**

Minimum 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. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Administrative Office Professional Degree Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 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 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>BA 228</td>
<td>Computer Accounting Applications</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 111W</td>
<td>Beginning Website Design: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</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 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 176</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 177</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS 131</td>
<td>10-key on Calculators</td>
<td>1</td>
</tr>
<tr>
<td>OS 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>OS 240</td>
<td>Filing and Records Management</td>
<td>4</td>
</tr>
<tr>
<td>OS 245</td>
<td>Office Systems and Procedures</td>
<td>4</td>
</tr>
<tr>
<td>OS 280F</td>
<td>Cooperative Education: Administrative Assistant</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Admin Asst Business Electives</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Admin Asst Degree Electives</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>97</td>
</tr>
</tbody>
</table>

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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Website Development and Design Degree Courses**

<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>
<tr>
<td>or WR 227</td>
<td>Technical and Professional Writing 1</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<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 111W</td>
<td>Beginning Website Design: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>CAS 180</td>
<td>Search Engine Optimization-SEO</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of HTML and CSS</td>
<td>4</td>
</tr>
<tr>
<td>CAS 213</td>
<td>JavaScript and JQuery for Designers</td>
<td>4</td>
</tr>
<tr>
<td>CAS 215</td>
<td>Intermediate CSS and Preprocessors</td>
<td>4</td>
</tr>
<tr>
<td>CAS 222</td>
<td>Integrated Website Design</td>
<td>4</td>
</tr>
<tr>
<td>CAS 225</td>
<td>PHP and MySQL for Designers</td>
<td>4</td>
</tr>
<tr>
<td>CAS 242</td>
<td>UX/UI Design for the Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 280W</td>
<td>Cooperative Education: Web Site Development</td>
<td>4</td>
</tr>
<tr>
<td>CAS 285</td>
<td>Capstone for Website Development/Design</td>
<td>3</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Choose one of the following:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BA 235</td>
<td>Social Media Marketing</td>
<td></td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
<td></td>
</tr>
<tr>
<td>OS 250</td>
<td>Creating a Virtual Office</td>
<td></td>
</tr>
<tr>
<td>Website Development and Design Electives</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>Remaining General Education</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>ART 115</td>
<td>*Basic Design - 2D Foundations</td>
<td>3</td>
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<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>4</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>BA 235</td>
<td>Social Media Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 255</td>
<td>Project Management - Business Environments</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 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 175E</td>
<td>Intro Web Animation</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 211W</td>
<td>WordPress Customizations and Theme Building</td>
<td>3</td>
</tr>
<tr>
<td>CAS 214</td>
<td>Beginning ColdFusion/CFML</td>
<td>4</td>
</tr>
<tr>
<td>CAS 220</td>
<td>Project Management - Beginning MS Project</td>
<td>4</td>
</tr>
<tr>
<td>CAS 233</td>
<td>Beginning Illustrator</td>
<td>3</td>
</tr>
<tr>
<td>CAS 265</td>
<td>Emerging Web Tools and Trends</td>
<td>3</td>
</tr>
<tr>
<td>CAS 275</td>
<td>Intermediate Flash</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Computer Concepts II</td>
<td>3</td>
</tr>
<tr>
<td>CIS 122</td>
<td>Introduction to Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CIS 125D</td>
<td>Database Application Development I</td>
<td>3</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>3</td>
</tr>
<tr>
<td>CIS 133W</td>
<td>JavaScript for Web Developers</td>
<td>4</td>
</tr>
<tr>
<td>CIS 135M</td>
<td>Mobile Application Programming for Android</td>
<td>4</td>
</tr>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>CIS 187I</td>
<td>Web Technical Administration</td>
<td>3</td>
</tr>
<tr>
<td>CIS 195P</td>
<td>PHP Web Development I</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 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 233W</td>
<td>JavaScript for Web Developers II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 235W</td>
<td>Introduction to Web Analytics</td>
<td>4</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-Commerce Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS 245</td>
<td>Project Management - Information Systems</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 287I</td>
<td>Web Server Administration</td>
<td>3</td>
</tr>
<tr>
<td>CIS 295P</td>
<td>PHP Web Development II</td>
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</tr>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
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</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
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</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<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</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>4</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>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>MSD 279</td>
<td>Project Management - Intro</td>
<td>4</td>
</tr>
<tr>
<td>OS 250</td>
<td>Creating a Virtual Office</td>
<td>4</td>
</tr>
<tr>
<td>OS 251</td>
<td>Virtual Office Concepts</td>
<td>4</td>
</tr>
</tbody>
</table>

* Could be used as General Education.

### One-Year Certificate

- Administrative Assistant (p. 71)
- Website Development and Design (p. 72)

### Less than One-Year Certificate

- Virtual Specialist (p. 73)

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

- Administrative Assistant: Administrative Support (p. 73)
- Administrative Assistant: Business Office Assistant (p. 73)
- Administrative Assistant: Computer Software Fundamentals (p. 73)
- Website Development & Design: Web Assistant I (p. 73)
- Website Development & Design: Web Assistant II (p. 73)

### Administrative Assistant One-Year Certificate

Minimum 51 credits. Students must meet certificate requirements.

### Administrative Assistant Certificate Courses

- BA 111 | Introduction to Accounting                                                   | 3       |
- BA 205 | Business Communication Using Technology                                      | 4       |
- BA 285 | Human Relations-Organizations                                                | 3       |
- CAS 109| Beginning PowerPoint                                                         | 1       |
- CAS 123| Production Keyboarding                                                       | 3       |
- CAS 133| Basic Computer Skills/Microsoft Office (or Administrative Assistant Certificate Elective Course) | 4       |
- CAS 140| Beginning Access                                                             | 3       |
- CAS 170| Beginning Excel                                                              | 3       |
- CAS 216| Beginning Word                                                               | 3       |
- CAS 246| Integrated Computer Projects                                                | 4       |
Website Development and Design Electives

OS 131 10-key on Calculators
OS 220 Business Editing Skills
OS 240 Filing and Records Management
OS 245 Office Systems and Procedures
WR 121 English Composition

Administrative Assistant Degree Elective

or General Education

Total Credits 51

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

Minimum 52 credits. Students must meet certificate requirements.

Website Development and Design Certificate Courses

BA 205 Business Communication Using Technology 4
or WR 227 Technical and Professional Writing 1
CAS 101 Introduction to Website Development & Design 1
CAS 110 Introduction to Web Graphics 1
CAS 111W Beginning Website Design: WordPress 3
CAS 180 Search Engine Optimization-SEO 3
CAS 206 Principles of HTML and CSS 3
CAS 213 JavaScript and JQuery for Designers 4
CAS 215 Intermediate CSS and Preprocessors 4
CAS 222 Integrated Website Design 4
CAS 225 PHP and MySQL for Designers 4
CAS 242 UX/UI Design for the Web 3
CAS 280W Cooperative Education: Web Site Development 2

Choose one of the following:
BA 235 Social Media Marketing
BA 250 Small Business Management
OS 250 Creating a Virtual Office

Website Development and Design Electives 12

Total Credits 52

Website Development and Design Electives

ART 115 * Basic Design - 2D Foundations 3
ART 116 * Basic Design - Color Foundations 3
ART 140A Digital Photography I 3
BA 101 Introduction to Business 4
BA 207 Introduction to E-Commerce 4
BA 235 Social Media Marketing 4
BA 239 Advertising 3
BA 250 Small Business Management 3
BA 255 Project Management - Business Environments 4
CAS 111D Beginning Website Creation: Dreamweaver 3

Beginning Website Creation: Dreamweaver 3
Beginning Photoshop 3
Beginning Access 3
Intro Web Animation 3
Introduction to Animation: Flash 3
CMS Website Creation: Drupal 3
CMS Website Creation: Joomla 3
WordPress Customizations and Theme Building 3
Beginning ColdFusion/CFML 4
Project Management - Beginning MS Project 3
Beginning Illustrator 3
Emerging Web Tools and Trends 3
Intermediate Flash 3
Computer Concepts I 4
Computer Concepts II 4
Introduction to Programming Logic 4
Database Application Development I 4
Introduction to Visual Basic.NET Programming 4
Java Programming I 4
JavaScript for Web Developers 4
Mobile Application Programming for Android 4
Data Communication Concepts I 4
Web Technical Administration 4
PHP Web Development I 4
Intermediate Visual Basic.NET Programming 4
Java Programming II 4
Advanced Visual Basic.NET Programming 4
Java Programming III 4
JavaScript for Web Developers II 4
Introduction to Web Analytics 4
E-ssentials of E-Commerce Information Systems 4
Project Management - Information Systems 4
Data Modeling and SQL Introduction 4
Advanced SQL 4
Web Server Administration 4
PHP Web Development II 4
Introduction to Multimedia 1
Multimedia Design 2
Multimedia Graphic Video and Audio Production 3
Multimedia Authoring I 3
Marketing Yourself as a Multimedia Professional 2
Multimedia Design II 3
Graphics for Multimedia 4
Vector Graphics & Animation for the World Wide Web 3
Digital Video Editing and Production 3
Video Compression and Streaming on the Internet 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>MSD 279</td>
<td>Project Management - Intro</td>
<td>3</td>
</tr>
<tr>
<td>OS 250</td>
<td>Creating a Virtual Office</td>
<td>4</td>
</tr>
<tr>
<td>OS 251</td>
<td>Virtual Office Concepts</td>
<td>4</td>
</tr>
</tbody>
</table>

* Could be used as General Education.

### Virtual Specialist Less Than One Year Certificate

Minimum 22 credits. Students must meet all certificate requirements.

#### Virtual Specialist Certificate Courses

<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>
<tr>
<td>BA 111</td>
<td>Introduction to Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 235</td>
<td>Social Media Marketing</td>
<td>4</td>
</tr>
<tr>
<td>CAS 111W</td>
<td>Beginning Website Design: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>or CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td></td>
</tr>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
</tr>
<tr>
<td>OS 250</td>
<td>Creating a Virtual Office</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 22

### Administrative Assistant: Administrative Support Career Pathway Certificate

Minimum 26 credits. Students must meet all certificate requirements. The Administrative Support Certificate is a Career Pathway. All courses are contained in the Administrative Assistant AAS Degree.

#### Administrative Support Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 122</td>
<td>Keyboarding for Speed and Accuracy</td>
<td>3</td>
</tr>
<tr>
<td>CAS 123</td>
<td>Production Keyboarding</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
<td>3</td>
</tr>
<tr>
<td>OS 220</td>
<td>Business Editing Skills</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Administrative Assistant Degree Electives</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 26

#### 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 & Design: Web Assistant I Career Pathway Certificate

Minimum 12 credits. Students must meet all certificate requirements. The Web Assistant I Certificate is a Career Pathway. All courses are contained in the Website Development and Design AAS Degree.

#### Web Assistant I Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course 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 111W</td>
<td>Beginning Website Design: WordPress</td>
<td>3</td>
</tr>
<tr>
<td>CAS 180</td>
<td>Search Engine Optimization-SEO</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of HTML and CSS</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 12

### Website Development & Design: Web Assistant II Career Pathway Certificate

Minimum 24 credits. Students must meet all certificate requirements. The Web Assistant II Certificate is a Career Pathway. All courses are contained in the Website Development and Design AAS Degree.

#### Web Assistant II Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course 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>
</tbody>
</table>
CAS 110  Introduction to Web Graphics
CAS 111W Beginning Website Design: WordPress
CAS 180  Search Engine Optimization-SEO
CAS 206  Principles of HTML and CSS
CAS 213  JavaScript and JQuery for Designers
CAS 215  Intermediate CSS and Preprocessors
CAS 242  UX/UI Design for the Web
CAS 280W Cooperative Education: Web Site Development

Total Credits  24

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

Career and Program Description
Computer Information Systems are the lifeblood of the 21st century. The mainstream languages, tools, technologies and techniques used in training will allow students to pursue careers in either the computer networking or information software fields. On the networking side, computer configuration, network installation, network systems administration, security, forensics and wireless networking are some career choices. On the software side, student career choices include all phases of application development, database programming, software quality assurance, 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 haven't 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.

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.

One-Year Certificate
1  Computer Information Systems
3

Less than One-Year Certificate
3
C# Application Programming
4
Database Design and SQL
4
Network Administration: Linux Server
3
Network Administration: Microsoft Server
Web Application Development
Java Application Programming
1

Admission Prerequisites
Academic Prerequisites
• The Less Than One-Year Certificates are limited entry certificates.
Other Prerequisites
• None

Program Requirements
Academic Requirements
• Computer Information Systems AAS: Students must satisfactorily complete all courses with a CIS and CS prefix in the degree with a grade of "C" or "P" or better.
• Computer Information Systems: Network Administration AAS Degree: Students must satisfactorily complete all courses with a CIS and CS prefix in the degree with a grade of "C" or "P" 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. Students must satisfactorily complete all courses with a CIS and CS prefix with a grade of "C" or "P" or better.
• The Less Than One-Year Certificates: These certificates begin at an advanced level and are designed for individuals already working in, or have worked in, an information technology position.
  • Students must satisfactorily complete all courses with a CIS and CS prefix with a grade of "C" or "P" or better.
  • Students must contact a CIS advisor for correct placement in any of these certificate programs.
• Reading, writing and math readiness is critical for all Computer Information System (CIS) degrees and certificates. Talk to a CIS Department advisor for clarification regarding what constitutes math competency. Students with insufficient preparation 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.

Other Requirements
• None

Associate of Applied Science Degree
Computer Information Systems (p. 75)
Computer Information Systems: Network Administration Option
(p. 76)
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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Computer Information Systems Degree Courses

CIS 120 * Computer Concepts I  
CIS 121 * Computer Concepts II  
CIS 122 * Introduction to Programming Logic  
CIS 140M Operating Systems I: Microsoft  
or CS 140U Introduction to UNIX  
CIS 179 Data Communication Concepts I  
CIS 244 Systems Analysis  
CIS 275 Data Modeling and SQL Introduction  
WR 121 English Composition  
WR 122 English Composition  
or WR 227 Technical and Professional Writing  
Total Credits 94

*C could be used as General Education  
1 CIS Program Electives - 36 credits total, 16 credits must be at the 200 level.

CIS Program Electives

CIS 206 Principles of HTML and CSS  
CAS 206 Principles of HTML and CSS  
CAS 215 Intermediate CSS and Preprocessors  
CIS 125D Database Application Development I  
CIS 133J Java Programming I  
CIS 133N Introduction to Programming Using C#.NET  
CIS 133W JavaScript for Web Developers  
CIS 134A Real-World Programming  
CIS 134N C# Programming  
CIS 135W Introduction to Web Analytics  
CIS 240L Linux Installation and Configuration  
CIS 240M Managing a Windows Server Environment  
CIS 243 E-ssentials of E-Commerce Information Systems  
CIS 244 Systems Analysis  
CIS 245 Project Management - Information Systems  
CIS 275 Data Modeling and SQL Introduction  
CIS 276 Advanced SQL  
CIS 277D Database Security  
CIS 277O Advanced Database Concepts in Oracle  
CIS 277T Web Business Intelligence Application Development  
CIS 278 Data Communication Concepts II  
CIS 279L Linux Network Administration  
CIS 280D Cooperative Education: Application Development  
CIS 280D Cooperative Education: Application Development  
CIS 284 Network Security  
CIS 286 Computer Forensics  
CIS 287I Web Server Administration  
CIS 287M Microsoft Server Security  
CIS 287X Microsoft Exchange Management  
CIS 288M Microsoft Network Administration  
CIS 289M Microsoft Active Directory Administration  
CIS 295P PHP Web Development II  
CS 133U C Programming  
CS 140U Introduction to UNIX  
CS 160 * Exploring Computer Science  
CS 161 * Computer Science I  
CS 162 * Computer Science II  
CS 201 Computer Systems  
CS 260 Data Structures  
CS 261 Programming Systems  
CS 279L Linux Network Administration  
CS 280D Cooperative Education: Application Development  
CS 287M Microsoft Server Security  
CS 287X Microsoft Exchange Management  
CS 288M Microsoft Network Administration  
CS 289M Microsoft Active Directory Administration  
CS 295P PHP Web Development II  
CS 133U C Programming  
CS 140U Introduction to UNIX  
CS 160 * Exploring Computer Science  
CS 161 * Computer Science I  
CS 162 * Computer Science II  
CS 201 Computer Systems  
CS 260 Data Structures  
CS 261 Programming Systems  
CS 133U C Programming  
CS 140U Introduction to UNIX

Computer Information Systems Program Electives

CIS 195P PHP Web Development I  
CIS 225 End User Support  
CIS 233J Java Programming II  
CIS 233N Intermediate C#.NET Programming  
CIS 233W JavaScript for Web Developers II  
CIS 234A Real-World Programming  
CIS 234N C# Programming  
CIS 235W Introduction to Web Analytics  
CIS 240L Linux Installation and Configuration  
CIS 240M Managing a Windows Server Environment  
CIS 243 E-ssentials of E-Commerce Information Systems  
CIS 244 Systems Analysis  
CIS 245 Project Management - Information Systems  
CIS 275 Data Modeling and SQL Introduction  
CIS 276 Advanced SQL  
CIS 277D Database Security  
CIS 277O Advanced Database Concepts in Oracle  
CIS 277T Web Business Intelligence Application Development  
CIS 278 Data Communication Concepts II  
CIS 279L Linux Network Administration  
CIS 280D Cooperative Education: Application Development  
CIS 284 Network Security  
CIS 286 Computer Forensics  
CIS 287I Web Server Administration  
CIS 287M Microsoft Server Security  
CIS 287X Microsoft Exchange Management  
CIS 288M Microsoft Network Administration  
CIS 289M Microsoft Active Directory Administration  
CIS 295P PHP Web Development II  
CS 133U C Programming  
CS 140U Introduction to UNIX  
CS 160 * Exploring Computer Science  
CS 161 * Computer Science I  
CS 162 * Computer Science II  
CS 201 Computer Systems  
CS 260 Data Structures  
CS 261 Programming Systems  
CS 133U C Programming  
CS 140U Introduction to UNIX

Computer Information Systems Programming Electives

CIS 178 Applied Internet Concepts  
CIS 179 Data Communication Concepts I  
CIS 188 Introduction to Wireless Networking  
CIS 189 Wireless Security  
CIS 243 E-ssentials of E-Commerce Information Systems  
CIS 244 Systems Analysis  
CIS 245 Project Management - Information Systems  
CIS 275 Data Modeling and SQL Introduction  
CIS 276 Advanced SQL  
CIS 277D Database Security  
CIS 277O Advanced Database Concepts in Oracle  
CIS 277T Web Business Intelligence Application Development  
CIS 278 Data Communication Concepts II  
CIS 279L Linux Network Administration  
CIS 280D Cooperative Education: Application Development  
CIS 284 Network Security  
CIS 286 Computer Forensics  
CIS 287I Web Server Administration  
CIS 287M Microsoft Server Security  
CIS 287X Microsoft Exchange Management  
CIS 288M Microsoft Network Administration  
CIS 289M Microsoft Active Directory Administration  
CIS 295P PHP Web Development II  
CS 133U C Programming  
CS 140U Introduction to UNIX  
CS 160 * Exploring Computer Science  
CS 161 * Computer Science I  
CS 162 * Computer Science II  
CS 201 Computer Systems  
CS 260 Data Structures  
CS 261 Programming Systems  
CS 133U C Programming  
CS 140U Introduction to UNIX

* 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 chair.
Computer Information Systems Program Business Electives

BA 206  Management Fundamentals
BA 211  Principles of Accounting I
BA 212  Principles of Accounting II
BA 213  Managerial Accounting
BA 223  Principles of Marketing
BA 226  Business Law I
EC 201  *  Principles of Economics: Microeconomics
EC 202  *  Principles of Economics: Macroeconomics

*  Could be used as General Education

Network Administration AAS Degree

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Network Administration Degree Courses

CIS 120  *  Computer Concepts I
CIS 121  *  Computer Concepts II
CIS 122  *  Introduction to Programming Logic
CIS 140M  Operating Systems I: Microsoft
CIS 145  Microcomputer Hardware and Troubleshooting
CIS 179  Data Communication Concepts I
CIS 240M  Managing a Windows Server Environment
or CIS 240L  Linux Installation and Configuration
CIS 244  Systems Analysis
CIS 280D  Cooperative Education: Application Development
CIS 288M  Microsoft Network Administration
or CIS 279L  Linux Network Administration
CS 140U  Introduction to UNIX
WR 121  English Composition
WR 122  English Composition
or WR 227  Technical and Professional Writing 1
CIS Network Administration Degree Electives 1  24
CIS Program Business Electives
CIS Programming Electives 2  6
Remaining General Education  8

Total Credits  94

*  Could be used as General Education.
1  Network Administration Electives - 24 credit total, 16 credits must be at the 200 level.
2  Students enrolled in the Network Administration AAS Degree are required to take only one course for 4 credits from the eight courses listed in the CIS Programming Elective lists.

Computer Information Systems Network Administration Degree Electives

CIS 188  Introduction to Wireless Networking
CIS 189  Wireless Security
CIS 225  End User Support
CIS 240L  Linux Installation and Configuration
CIS 240M  Managing a Windows Server Environment
CIS 245  Project Management - Information Systems
CIS 275  Data Modeling and SQL Introduction
CIS 278  Data Communication Concepts II
CIS 279L  Linux Network Administration
CIS 284  Network Security
CIS 286  Computer Forensics
CIS 287I  Web Server Administration
CIS 287M  Microsoft Server Security
CIS 287X  Microsoft Exchange Management
CIS 288M  Microsoft Network Administration
CIS 289M  Microsoft Active Directory Administration

Computer Information Systems Program Business Electives

BA 206  Management Fundamentals
BA 211  Principles of Accounting I
BA 212  Principles of Accounting II
BA 213  Managerial Accounting
BA 223  Principles of Marketing
BA 226  Business Law I
EC 201  *  Principles of Economics: Microeconomics
EC 202  *  Principles of Economics: Macroeconomics

*  Could be used as General Education

Computer Information Systems Programming Electives

CS 161  Computer Science I
& CS 162  and Computer Science II
CIS 133J  Java Programming I
& CIS 233J  and Java Programming II
CIS 133N  Introduction to Programming Using C#.NET
& CIS 233N  and Intermediate C#.NET Programming
CIS 133W  JavaScript for Web Developers
& CIS 233W  and JavaScript for Web Developers II

One-Year Certificate

Computer Information Systems (p. 77)

Less than One-Year Certificate

C# Application Programming (p. 77)
Database Design and SQL (p. 78)
Java Application Programming (p. 78)
Network Administration: Microsoft Server (p. 78)
Network Administration: Linux Server (p. 78)
### Computer Information Systems One-Year Certificate

Minimum 47 credits. Students must meet all certificate requirements.

#### Computer Information Systems Certificate 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>Introduction to Programming Logic</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>PSY 201A</td>
<td>Introduction to Psychology - Part 1</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 I</td>
<td>4</td>
</tr>
<tr>
<td>CIS Program Electives (see list below)</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>CIS Program Business Electives (see list below)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td>47</td>
<td></td>
</tr>
</tbody>
</table>

#### 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 206</td>
<td>Principles of HTML and CSS</td>
<td>4</td>
</tr>
<tr>
<td>CAS 215</td>
<td>Intermediate CSS and Preprocessors</td>
<td>4</td>
</tr>
<tr>
<td>CIS 125D</td>
<td>Database Application Development I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133J</td>
<td>Java Programming I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133N</td>
<td>Introduction to Programming Using C#.NET</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 for Android</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 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 233J</td>
<td>Java Programming II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233N</td>
<td>Intermediate C#.NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233W</td>
<td>JavaScript for Web Developers II</td>
<td>4</td>
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<tr>
<td>CIS 234A</td>
<td>Real-World Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 234N</td>
<td>C# Programming</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>E-ssentials of E-Commerce Information Systems</td>
<td>4</td>
</tr>
<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>
<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>
<td>4</td>
</tr>
<tr>
<td>CIS 278</td>
<td>Data Communication Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 279L</td>
<td>Linux Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 280D</td>
<td>Cooperative Education: Application Development</td>
<td>4</td>
</tr>
<tr>
<td>CIS 284</td>
<td>Network Security</td>
<td>4</td>
</tr>
<tr>
<td>CIS 286</td>
<td>Computer Forensics</td>
<td>4</td>
</tr>
<tr>
<td>CIS 287I</td>
<td>Microsoft Server Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 287M</td>
<td>Microsoft Exchange Management</td>
<td>4</td>
</tr>
<tr>
<td>CIS 287X</td>
<td>Microsoft Network Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 288M</td>
<td>Microsoft Active Directory Administration</td>
<td>4</td>
</tr>
<tr>
<td>CIS 289M</td>
<td>PHP Web Development II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133U</td>
<td>C Programming</td>
<td>4</td>
</tr>
<tr>
<td>CIS 140U</td>
<td>Introduction to UNIX</td>
<td>4</td>
</tr>
<tr>
<td>CS 160</td>
<td>Exploring Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>CS 161</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>CS 162</td>
<td>Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>CS 201</td>
<td>Computer Systems</td>
<td>4</td>
</tr>
<tr>
<td>CS 260</td>
<td>Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>CS 261</td>
<td>Programming Systems</td>
<td>4</td>
</tr>
<tr>
<td>EET 178</td>
<td>Computing Environments for Technicians</td>
<td>4</td>
</tr>
<tr>
<td>CS 276</td>
<td>Advanced SQL</td>
<td>4</td>
</tr>
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<td>CS 277D</td>
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<td>CS 161</td>
<td>Computer Science I</td>
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<tr>
<td>CS 162</td>
<td>Computer Science II</td>
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<td>Computer Systems</td>
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<tr>
<td>CS 260</td>
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</tr>
<tr>
<td>CS 261</td>
<td>Programming Systems</td>
<td>4</td>
</tr>
<tr>
<td>EET 178</td>
<td>Computing Environments for Technicians</td>
<td>4</td>
</tr>
<tr>
<td>* Could be used as General Education</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
| 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 chair.

#### Computer Information Systems Program Business Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<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 223</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>EC 201</td>
<td>Principles of Economics: Microeconomics</td>
<td>4</td>
</tr>
<tr>
<td>EC 202</td>
<td>Principles of Economics: Macroeconomics</td>
<td>4</td>
</tr>
</tbody>
</table>

* Could be used as General Education

#### C# Application Programming Less than One-Year 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>CIS 122</td>
<td>Introduction to Programming Logic</td>
<td>4</td>
</tr>
<tr>
<td>CIS 133N</td>
<td>Introduction to Programming Using C#.NET</td>
<td>4</td>
</tr>
<tr>
<td>CIS 233N</td>
<td>Intermediate C#.NET Programming</td>
<td>4</td>
</tr>
</tbody>
</table>
Web Application Development Less than One-Year Certificate
Minimum 12 credits. Students must meet all certificate requirements.

Web Application Development Certificate Courses
- CIS 133W JavaScript for Web Developers 4
- CIS 135M Mobile Application Programming for Android 4
- CIS 195P PHP Web Development I 4

Total Credits 12

Computer Science
Rock Creek Campus
Building 7, Room 702
971-722-7257 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, or Associate of Science (AS) 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 transfer 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

**Admission Prerequisites**

**Academic Prerequisites**

- None

**Other Prerequisites**

- None

**Program Requirements**

**Academic Requirements**

- Students must pass all prerequisite courses with a “C” or “P” or better in order to enroll in any CJA courses with a “200” or higher designator.

**Other Requirements**

- None

**Criminal Justice AAS Degree**

Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency. (p. 13) Students should consult with program advisors for course planning.

**Criminal Justice Degree Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</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>CJA 211</td>
<td>Civil Liability in Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJA 212</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
<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>
</tr>
<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>4</td>
</tr>
<tr>
<td>CJA 228</td>
<td>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>National Security and Intelligence</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 250</td>
<td>Human Trafficking</td>
<td>3</td>
</tr>
<tr>
<td>CJA 251</td>
<td>Management Strategies for Police Leaders</td>
<td>4</td>
</tr>
<tr>
<td>CJA 252</td>
<td>Innovative Police Leadership</td>
<td>4</td>
</tr>
<tr>
<td>CJA 253</td>
<td>Critical Thinking for Police Leaders</td>
<td>4</td>
</tr>
<tr>
<td>CJA 254</td>
<td>Leading Resilience</td>
<td>4</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 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>
</tr>
</tbody>
</table>

1 Department permission required prior to registration.
Corrections Technician Career Pathway Certificate

Minimum 29 credits. Students must meet all certificate requirements. The Corrections Technician Certificate is a Career Pathway. All courses are contained in the Criminal Justice AAS Degree.

Corrections Technician Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
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<tr>
<td>CJA 100</td>
<td>Professions in Criminal Justice</td>
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<td>CJA 101</td>
<td>Cultural Diversity in Criminal Justice</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 115</td>
<td>Introduction to Jail Operations</td>
<td>3</td>
</tr>
<tr>
<td>CJA 263</td>
<td>Introduction to Corrections Casework</td>
<td>3</td>
</tr>
<tr>
<td>CJA 280A</td>
<td>Cooperative Education: Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 29

Culinary Assistant

Sylvania Campus
Science and Technology Building (ST), Room 3
971-722-4305
971-722-4883 (Fax)

www.pcc.edu/programs/culinary-assistant/

Career and Program Description

The Culinary Assistant Program is designed for students with disabilities who have significant barriers to employment. Students develop entry level job skills in food service and custodial service. The program also focuses on the acquisition of work habits and behaviors necessary to maintain competitive employment.

Degrees and Certificates Offered

One-Year Certificate
Culinary Assistant Training

Admission Prerequisites

Academic Prerequisites

• This is a limited entry program with restricted enrollment.

Other Prerequisites

• An interview with the program coordinator is required prior to enrollment.
• Qualified students must be 18 years or older with a documented disability, have the ability to work semi-independently, willing to learn and improve.

Program Requirements

Academic Requirements

• None

Other Requirements

• Students can enroll at the beginning of each fall, winter or spring term of a year.
• Students work with PCC Food Services or Facilities Management Services to learn the specific job skills in their work area.
• Individualized training and assistance in maintaining positive work habits are provided by the program coordinator.
• Classroom sessions focus on good work ethics, positive attitude, appropriate work behaviors, professionalism, etc., developing job success skills, specific job-related knowledge (such as food safety, job safety, money handling, etc.), as well as job search technique.
• The program coordinator also provides six hours of individualized job development activities with each student.

Culinary Assistant Training One-Year Certificate

Minimum 45 credits. Students must meet all certificate requirements

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>
<th>Second Term</th>
<th>Credits</th>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR 107</td>
<td>Culinary Assistant Training I</td>
<td>15</td>
<td>HR 108</td>
<td>Culinary Assistant Training II</td>
<td>15</td>
</tr>
<tr>
<td>HR 109</td>
<td>Culinary Assistant Training III</td>
<td>15</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Total Credits: 45

Dance

Cascade Campus
Physical Education Building (PEB)
971-722-5524

Rock Creek
Building 5, Room 245
971-722-7327

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

www.pcc.edu/programs/dance/

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**

**Rock Creek Campus**
Building 2, Room 230
971-722-7465

www.pcc.edu/thinkbig

**Career and Program Description**

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

**Degrees and Certificates Offered**

**Associate of Applied Science Degree**
Dealer Service Technology

**Admission Prerequisites**

**Academic Prerequisites**

- Applicants must take the placement test administered through the testing center at PCC, or a center provided by their CAT dealer contact person.
- 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.
- This is a limited entry program.

- 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.

**Other Prerequisites**

- 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).

**Program Requirements**

**Academic Requirements**

- Students must meet general education and comprehensive degree requirements.

**Other Requirements**

- None

**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 58/65 competency (p. 13). 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>DST 110</td>
<td>Caterpillar Engine Fundamentals</td>
</tr>
<tr>
<td>DST 111</td>
<td>Introduction to Caterpillar Service Industry</td>
</tr>
<tr>
<td>WLD 217</td>
<td>Diesel Welding</td>
</tr>
</tbody>
</table>

**Second Term**

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

**Third Term**

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

**Fourth Term**

**First Module**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST 150 (Part II)</td>
<td>Caterpillar Service Technology Internship</td>
</tr>
</tbody>
</table>

**Second Module**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DST 115</td>
<td>Air Conditioning</td>
</tr>
<tr>
<td>DST 116</td>
<td>Fundamentals of Transmissions and Torque Converters</td>
</tr>
<tr>
<td>DST 203</td>
<td>Caterpillar Machine Diagnostic</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
</tbody>
</table>
Fifth Term
DST 150 (Part III) Caterpillar Service Technology Internship 6

Sixth Term
DST 200 Undercarriage and Final Drive 4
DST 201 Machine Electronic Systems 4
General Education

Seventh Term
DST 150 (Part IV) Caterpillar Service Technology Internship 6

Eighth Term
DST 117 Caterpillar Machine Hydraulic Systems 4
DST 202 Caterpillar Engine Performance 3
DST 204 Machine Specific Systems 6
WR 121 English Composition 4

Total Credits: 101

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

Health Admissions Office
College Center (CC), Room 208
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 retainers, place sealants, perform temporary denture relines, place retraction cord and various orthodontic duties.

Computer skills are an important asset to a dental assistant. Students should be familiar with basic computer key boarding skills. Dental computer programs are learned in the office procedures courses.

The Dental Assisting program is a limited entry program with restricted enrollment. The program is limited to 45 students. Applications are accepted from October 1 to April 15. Application forms may be obtained at www.pcc.edu/da and should be submitted along with high school and college transcripts to:

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

For information call 971-722-4795 or check the website www.pcc.edu/da. Candidates will be notified of their admission status by late May.

Degrees and Certificates Offered
One-Year Certificate
Dental Assisting

Accredited by the Commission on Dental Accreditation (CODA).

Admission Prerequisites
Academic Prerequisites
• High school diploma or college transcripts showing a minimum 2.0 GPA, or GED.
• 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:
  • WR 115 or higher level writing course (Placement into WR 121 can substitute for the WR 115 course).
  • Approved college level nutrition course or health course with a nutrition component. Recommended classes include HE 250, HE 295 and PE 295 or FN 225.
  • Placement into MTH 20 or higher.
  • Approved college-level Psychology course. PSY 101 is recommended.
• Pass/No Pass grades are not acceptable in prerequisites.
• The Dental Assisting program is a limited entry program with restricted enrollment.
  • The program is limited to 45 students. Applications are accepted from October 1 to April 15. Application forms may be obtained at www.pcc.edu/da and should be submitted along with high school and college transcripts to:
    • Health Admissions Office
      Sylvania Campus, (HT) Room 205
      Portland Community College
      P.O. Box 19000
      Portland, Oregon 97280-0990
    • For information call 971-722-4795 or check the website www.pcc.edu/da.
    Candidates will be notified of their admission status by late May.

Other Prerequisites
• 12 hours of shadowing in a dental office or clinic facility that is documented by dentist’s signature with the dentist’s business card attached.
• Applicants should have all courses and job shadowing complete by the end of winter term. Courses planned for spring term may not be considered. 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).
Program Requirements

Academic Requirements

- None

Other Requirements

- 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) and a drug screen as a condition of their acceptance into a medical or other facility for training.
  - Students who do not pass the CHC and drug screen are not eligible to complete training at affiliated practicum sites, sit for licensure or certification exams; or be hired for some professional positions. If you believe that your past history may interfere with your ability to complete the program of study or to obtaining licensure, or certification in your chosen field, you should contact the appropriate state board or program director.

- 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.

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

For Academic Year 2017-2018, applicants will be required to take MP 111 (Medical Terminology) prior to enrolling. This course is offered online and Face-to-Face every term at all Portland Community College Campuses.

Dental Assisting One-Year Certificate

Minimum 45 credits. Students must meet all certificate requirements.

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

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

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA 114 Clinical Procedures III</td>
<td>1</td>
</tr>
<tr>
<td>DA 115 Clinical Procedures Lab III</td>
<td>5</td>
</tr>
<tr>
<td>DA 119 Expanded Duties II</td>
<td>1</td>
</tr>
<tr>
<td>DA 125 Dental Radiology III (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>DA 135 Dental Materials III (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>DA 152 Dental Office Procedures II</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits: 45

Dental Hygiene

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

Health Admissions Office
College Center Building (CC), Room 208
971-722-4795

www.pcc.edu/dh

Career and Program Description

A dental hygienist is a licensed oral health care provider who teaches patients how to recognize their oral conditions and how to care for their mouths. Dental hygienists work in private practices, coordinated care organizations, community clinics and even independently with an Expanded Practice Permit. A dental hygienist evaluates a patient’s mouth and uses these findings to decide on appropriate treatment. In addition, a dental hygiene provider treats advanced periodontitis (gum
disease), performs oral cancer screenings, applies fluorides and sealants, and provides tobacco and nutritional counseling. Hygienists with a Restorative Endorsement also place restorations (fillings).

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 will follow CDC suggested work restrictions for health-care personnel infected with or exposed to major infectious diseases in health care settings, from the CDC’s Guidelines for Infection Control in Dental Health-Care Settings–2003, available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5217a1.htm Table 1, attached to and incorporated by this reference to this policy.

All PCC students enrolled in a health care or child care program, including dental hygiene, with requirements for practical experience of field training may have to pass a Criminal History Check (CHC) and Drug Screen as a condition of their acceptance into a medical or other facility for training.

Students who do not pass the CHC and drug screen 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, Building CC, Room 208
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**

**Admission Prerequisites**

**Academic Prerequisites**

- Completion of the following courses or their equivalents with a letter grade of "C" or higher are required to be considered for application to the Dental Hygiene Program:
  a. WR 121
  b. MTH 65 or higher
  c. 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
  d. BI 234 with lab (completed within the last seven years)
  e. 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.
  f. PSY 101
  g. SOC 204
  h. COMM 111

- All prerequisite courses 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.

**Other Prerequisites**

- 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

**Program Requirements**

**Academic Requirements**

- None

**Other Requirements**

- None

**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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

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

First Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 101</th>
<th>Dental Hygiene Theory I</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>DH 104</td>
<td>Dental Hygiene Practice I</td>
</tr>
<tr>
<td>3</td>
<td>DH 113</td>
<td>Dental Anatomy</td>
</tr>
<tr>
<td>2</td>
<td>DH 113L</td>
<td>Dental Anatomy (Lab)</td>
</tr>
<tr>
<td>1</td>
<td>DH 121</td>
<td>Oral Health Education and Promotion</td>
</tr>
<tr>
<td>1</td>
<td>DH 127</td>
<td>Medical Emergencies</td>
</tr>
<tr>
<td>2</td>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 102</th>
<th>Dental Hygiene Theory II</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>DH 105</td>
<td>Dental Hygiene Practice II</td>
</tr>
<tr>
<td>3</td>
<td>DH 109</td>
<td>Dental Radiology I</td>
</tr>
<tr>
<td>2</td>
<td>DH 109L</td>
<td>Dental Radiology I (Lab)</td>
</tr>
<tr>
<td>1</td>
<td>DH 128</td>
<td>Oral Histology</td>
</tr>
<tr>
<td>1</td>
<td>DH 228</td>
<td>Head and Neck Anatomy</td>
</tr>
<tr>
<td>2</td>
<td>DH 236</td>
<td>Ethics &amp; Jurisprudence</td>
</tr>
<tr>
<td>4</td>
<td>General Education</td>
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</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 103</th>
<th>Dental Hygiene Theory III</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DH 106</td>
<td>Dental Hygiene Practice III</td>
</tr>
<tr>
<td>2</td>
<td>DH 110</td>
<td>Cariology</td>
</tr>
<tr>
<td>1</td>
<td>DH 129</td>
<td>Oral Pathology</td>
</tr>
<tr>
<td>2</td>
<td>DH 210</td>
<td>Dental Radiology Lab II</td>
</tr>
<tr>
<td>1</td>
<td>DH 230</td>
<td>Dental Materials</td>
</tr>
<tr>
<td>1</td>
<td>DH 240</td>
<td>Intro to Dh Restorative Dentistry</td>
</tr>
<tr>
<td>2</td>
<td>DH 246</td>
<td>Pharmacology</td>
</tr>
<tr>
<td>4</td>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 241</th>
<th>DH Restorative Dentistry I</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DH 242</td>
<td>DH Restorative Dentistry II</td>
</tr>
<tr>
<td></td>
<td>FN 225</td>
<td>Nutrition</td>
</tr>
<tr>
<td></td>
<td>or FN 270</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 201</th>
<th>Dental Hygiene Theory IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>DH 204</td>
<td>Dental Hygiene Practice IV</td>
</tr>
<tr>
<td></td>
<td>or DH 204A</td>
<td>Dentistry Practice IV</td>
</tr>
<tr>
<td></td>
<td>&amp; DH 204B</td>
<td>Dentistry Practice IV</td>
</tr>
<tr>
<td></td>
<td>DH 208</td>
<td>Community Oral Health I</td>
</tr>
<tr>
<td></td>
<td>DH 229</td>
<td>Local Anesthesia</td>
</tr>
<tr>
<td></td>
<td>DH 243</td>
<td>DH Restorative Dentistry III</td>
</tr>
<tr>
<td></td>
<td>DH 260</td>
<td>Periodontology I</td>
</tr>
<tr>
<td>2</td>
<td>DH 202</td>
<td>Dental Hygiene Theory V</td>
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</table>

Sixth Term

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 205</th>
<th>Dental Hygiene Practice V</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>DH 244</td>
<td>DH Restorative Dentistry IV</td>
</tr>
<tr>
<td>1</td>
<td>DH 250</td>
<td>Research Methods and Issues in Oral Health</td>
</tr>
<tr>
<td>1</td>
<td>DH 252</td>
<td>Community Oral Health II</td>
</tr>
<tr>
<td>2</td>
<td>DH 203</td>
<td>Dental Hygiene Theory VI</td>
</tr>
<tr>
<td>2</td>
<td>DH 206</td>
<td>Dental Hygiene Practice VI</td>
</tr>
<tr>
<td>5</td>
<td>DH 245</td>
<td>DH Restorative Dentistry V</td>
</tr>
<tr>
<td>1</td>
<td>DH 253</td>
<td>Community Oral Health III</td>
</tr>
<tr>
<td>2</td>
<td>Total Credits: 108</td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Credits</th>
<th>DH 100</th>
<th>Special Dental Hygiene Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>DH 232</td>
<td>Nitrous Oxide Sedation</td>
</tr>
<tr>
<td>2</td>
<td><a href="http://www.pcc.edu/dlt">www.pcc.edu/dlt</a></td>
<td>Career and Program Description</td>
</tr>
</tbody>
</table>

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

**Skill Upgrade Courses:** Laboratory practicums are offered to experienced technicians who wish to upgrade their skills in any of the five specialties. Laboratory credits vary from 1-5, depending on the technicians needs.

**Degrees and Certificates Offered**

**Associate of Applied Science Degree**
Dental Laboratory Technology

**Two-Year Certificate**
Dental Laboratory Technology

**Admission Prerequisites**

**Academic Prerequisites**
- GED, high school graduation or minimum college GPA of 2.0. (Proof of completion/graduation/college transcript must be submitted in your application).
- Completion of RD 90 with a C or better or equivalent placement test score.
- Placement into MTH 20.
- This is a limited entry program with restricted enrollment.

**Other Prerequisites**
- Satisfactory performance of wax carving tests (prerequisite).
- Students must show evidence of having begun or completed the immunization series for Hepatitis B.

**Program Requirements**

**Academic Requirements**
- None

**Other Requirements**
- None

**Dental Laboratory Technology AAS Degree**
Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. 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.

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>DT 101§</td>
<td>Dental Technology Lab I</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DT 120§</td>
<td>Dental Anatomy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 141</td>
<td>Denture Techniques I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 151</td>
<td>Science of Dental Materials I</td>
<td>2</td>
</tr>
<tr>
<td>Second Term</td>
<td>DT 102§</td>
<td>Dental Technology Lab II</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DT 142</td>
<td>Denture Techniques II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 152</td>
<td>Science of Dental Materials II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HE 125</td>
<td>First Aid &amp; Industrial Safety</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Third Term</td>
<td>DT 103§</td>
<td>Dental Technology Lab III</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DT 271§</td>
<td>Partial, Immediate and Overdentures</td>
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</tr>
<tr>
<td></td>
<td>Any COMM course on General Education List</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>DT Degree Electives</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Fourth Term</td>
<td>DT 204§</td>
<td>Dental Technology Lab IV</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DT 253§</td>
<td>Science of Dental Materials III</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 270§</td>
<td>Inlay Casting, Crown and Bridge</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DT 275§</td>
<td>Dental Laboratory Management</td>
<td>2</td>
</tr>
<tr>
<td>Fifth Term</td>
<td>DT 205§</td>
<td>Dental Technology Lab V</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>DT 254§</td>
<td>Science of Dental Materials IV</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 272§</td>
<td>Dental Ceramics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DT 276§</td>
<td>Dental Laboratory Management Lab</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Sixth Term</td>
<td>DT 206A§</td>
<td>Dental Technology Lab VI (Fabrication Ortho Appliances)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DT 206B§</td>
<td>Dental Technology Lab VII (CAD/CAM and Implant Restorations)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DT 284</td>
<td>Dental Specialties</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DT 286§</td>
<td>DT Registered Graduate Preparation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>DT 287§</td>
<td>Introduction to CAD/CAM Technology and Dental Implant System</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits:</strong></td>
<td></td>
<td></td>
<td><strong>91</strong></td>
</tr>
</tbody>
</table>

§ Course cannot be substituted for another course.

**Dental Laboratory Technology Degree Electives**

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

Dental Laboratory Technology Two-Year Certificate
Minimum 75 credits. Students must meet all certificate requirements.

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>DT 101</td>
<td>6</td>
</tr>
<tr>
<td>DT 120</td>
<td>2</td>
</tr>
<tr>
<td>DT 151</td>
<td>2</td>
</tr>
<tr>
<td>DT 141</td>
<td>2</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>DT 142</td>
<td>2</td>
</tr>
<tr>
<td>DT 102</td>
<td>6</td>
</tr>
<tr>
<td>HE 125</td>
<td>3</td>
</tr>
<tr>
<td>DT 152</td>
<td>3</td>
</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>DT 103</td>
<td>6</td>
</tr>
<tr>
<td>DT 271</td>
<td>2</td>
</tr>
<tr>
<td>Any COMM course on General Education list</td>
<td>4</td>
</tr>
<tr>
<td>Fourth Term</td>
<td></td>
</tr>
<tr>
<td>DT 204</td>
<td>6</td>
</tr>
<tr>
<td>DT 253</td>
<td>2</td>
</tr>
<tr>
<td>DT 270</td>
<td>3</td>
</tr>
<tr>
<td>DT 275</td>
<td>2</td>
</tr>
<tr>
<td>Fifth Term</td>
<td></td>
</tr>
<tr>
<td>DT 205</td>
<td>6</td>
</tr>
<tr>
<td>DT 254</td>
<td>2</td>
</tr>
<tr>
<td>DT 272</td>
<td>3</td>
</tr>
<tr>
<td>DT 276</td>
<td>1</td>
</tr>
<tr>
<td>Sixth Term</td>
<td></td>
</tr>
<tr>
<td>DT 206A</td>
<td>3</td>
</tr>
<tr>
<td>DT 206B</td>
<td>3</td>
</tr>
<tr>
<td>DT 284</td>
<td>2</td>
</tr>
<tr>
<td>DT 286</td>
<td>1</td>
</tr>
<tr>
<td>DT 287</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 75

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

Admission Prerequisites

Academic Prerequisites

For the Degree program:

- Completion of RD 80 or higher or equivalent placement test score.
- Completion of MTH 20 or higher or equivalent placement test score or successful completion of the diesel service technology math entrance exam.

For the Certificate program:

- Completion of RD 80 or higher or equivalent placement test score.
- Completion of MTH 20 or higher or equivalent placement test score or successful completion of the Diesel Service Technology Math Entrance Exam.

Other Prerequisites

- None

Program Requirements

Academic Requirements

- Students must complete every DS course with a grade of "C" or "P" or higher to receive credit for that course towards a DS degree or certificate.

Other Requirements

- ASE (Automotive Service Excellence) student certification testing is required upon completion of core classes for the degree and certificate.

Diesel Service Technology AAS Degree
Minimum 96 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. 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.

Diesel Service Degree Courses

CG 209 Job Finding Skills
Two-Year Certificate
Diesel Service Technology (p. 88)

Less than One-Year Certificate
Diesel Service Technology (p. 88)

Diesel Service Technology Two-Year Certificate
Minimum 76 credits. Students must meet all certificate requirements.

Diesel Service Technology Certificate Electives

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

Career Program and Description
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: Career Pathway Certificate
Childcare Aide
Early Education and Family Studies

Admission Prerequisites
Academic Prerequisites

• College placement test administered through assessment centers.
• 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).

Other Prerequisites
• An initial advising/information session with an Early Education Program faculty advisor. Info session schedule available at the EEFS Office.

Program Requirements
Academic Requirements

• In order to earn the AAS degree or Certificate in Early Education and Family Studies students must:
  • Complete all program core courses with a letter grade of "C" or better.
  • Complete the required practica 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 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:
  • be enrolled in the State of Oregon Office of Child Care, Central Background Registry;
  • submit verification of measles immunization;
  • submit verification of TB Skin Test;
  • submit verification of Tdap vaccine; and
  • complete a Food Handlers Certificate.
• Costs associated with required practicum documentation are the sole responsibility of the student.

Other Requirements
• 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 State of Oregon Office of Child Care. The National Association for the Education of Young Children’s (NAEYC) minimum suggested training for teachers in early childhood programs is also an AAS degree in EEFS. All required courses 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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Early Education and Family Studies Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 120</td>
<td>Introduction to Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 121</td>
<td>Observation and Guidance I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 122</td>
<td>Environments and Curriculum in Early Care and Ed I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 123</td>
<td>Environments and Curriculum in Early Care and Ed II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 124</td>
<td>Multicultural Practices: Exploring Our Views</td>
<td>3</td>
</tr>
<tr>
<td>ECE 130A</td>
<td>Practicum Seminar 1</td>
<td>2</td>
</tr>
<tr>
<td>ECE 130B</td>
<td>Practicum Seminar 2</td>
<td>2</td>
</tr>
<tr>
<td>ECE 130C</td>
<td>Practicum Seminar 3</td>
<td>2</td>
</tr>
<tr>
<td>ECE 133</td>
<td>Practicum 1</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 131A</td>
<td>Practicum for Experienced Teachers 1</td>
<td>3</td>
</tr>
<tr>
<td>ECE 134</td>
<td>Practicum 2</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 131B</td>
<td>Practicum for Experiences Teachers 2</td>
<td>3</td>
</tr>
<tr>
<td>ECE 135</td>
<td>Practicum 3</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 131C</td>
<td>Practicum for Experiences Teachers 3</td>
<td>3</td>
</tr>
<tr>
<td>ECE 200</td>
<td>The Professional in Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 221</td>
<td>Observation and Guidance II</td>
<td>3</td>
</tr>
<tr>
<td>ECE 224</td>
<td>Multicultural Practice: Curriculum &amp; Implementation</td>
<td>3</td>
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</table>
### Early Education and Family Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECE 234</td>
<td>Children with Special Needs in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE 236</td>
<td>Language and Literacy in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE 260A</td>
<td>Advanced Practicum Seminar 1</td>
<td>3</td>
</tr>
<tr>
<td>ECE 260B</td>
<td>Advanced Practicum Seminar 2</td>
<td>3</td>
</tr>
<tr>
<td>ECE 264</td>
<td>Practicum 4</td>
<td>4</td>
</tr>
<tr>
<td>ECE 265</td>
<td>Practicum 5</td>
<td>3</td>
</tr>
<tr>
<td>HE 112</td>
<td>Standard First Aid and Emergency Care</td>
<td>1</td>
</tr>
<tr>
<td>HEC 201</td>
<td>Family Partnerships in Education</td>
<td>3</td>
</tr>
<tr>
<td>HEC 226 *</td>
<td>Child Development</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
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<tr>
<td>ECE Electives</td>
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</tr>
<tr>
<td>Remaining General Education</td>
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<td>12</td>
</tr>
</tbody>
</table>

**Total Credits:** 92

* Could be used as General Education.

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

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

### Early Education and Family Studies Degree Electives

<table>
<thead>
<tr>
<th>Course 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 177</td>
<td>Payroll Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BA 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 250</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BA 285</td>
<td>Human Relations-Organizations</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>3</td>
</tr>
<tr>
<td>COMM 100</td>
<td>Introduction to Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECE 132</td>
<td>Early Childhood Field Work</td>
<td>3</td>
</tr>
<tr>
<td>ECE 170</td>
<td>Coaching and Mentoring in Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 173</td>
<td>Children and Loss: The Effects of Death and Divorce</td>
<td>3</td>
</tr>
<tr>
<td>ECE 174</td>
<td>Head Start Past and Present</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175A</td>
<td>Infant/Toddler Caregiving: Learning and Development</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175B</td>
<td>Infant/Toddler Caregiving: Group Care</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175C</td>
<td>Infant/Toddler Caregiving: Social/Emotional Growth</td>
<td>1</td>
</tr>
<tr>
<td>ECE 175D</td>
<td>Infant/Toddler Caregiving: Family/Provider Relationships</td>
<td>1</td>
</tr>
<tr>
<td>ECE 177</td>
<td>Tiny to Tall: Making Mixed Age Groupings Work</td>
<td>4</td>
</tr>
<tr>
<td>ECE 179</td>
<td>The Power of Portfolios in Early Education</td>
<td>4</td>
</tr>
<tr>
<td>ECE 184</td>
<td>Children’s Puppetry &amp; Theater</td>
<td>4</td>
</tr>
<tr>
<td>ECE 185</td>
<td>Planning Fun and Meaningful Field Trips for Young Children</td>
<td>4</td>
</tr>
<tr>
<td>ECE 188</td>
<td>Block Play and Woodworking for Young Children</td>
<td>4</td>
</tr>
<tr>
<td>ECE 195</td>
<td>Boys in Early Childhood Education</td>
<td>4</td>
</tr>
<tr>
<td>ECE 196</td>
<td>Teaming and Communication in ECE Settings</td>
<td>4</td>
</tr>
<tr>
<td>ECE 197</td>
<td>Career Exploration in Early Education and Family Studies</td>
<td>1</td>
</tr>
<tr>
<td>ECE 198</td>
<td>Building Effective Outdoor Environments</td>
<td>1</td>
</tr>
<tr>
<td>ECE 235</td>
<td>Music and Movement in Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ECE 238</td>
<td>Administration of Early Childhood Programs</td>
<td>3</td>
</tr>
<tr>
<td>ED 100</td>
<td>Introduction to Education for Paraeducators</td>
<td>3</td>
</tr>
<tr>
<td>ED 102</td>
<td>Displays &amp; Graphics for Educators</td>
<td>3</td>
</tr>
<tr>
<td>ED 112</td>
<td>Introduction to Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>ED 115</td>
<td>Storytelling</td>
<td>2</td>
</tr>
<tr>
<td>ED 131</td>
<td>Applied Learning Theory</td>
<td>3</td>
</tr>
<tr>
<td>ED 136</td>
<td>Learning with Technology</td>
<td>3</td>
</tr>
<tr>
<td>ED 260</td>
<td>Multicultural Literature for Children and Young Adults</td>
<td>3</td>
</tr>
<tr>
<td>ED 268</td>
<td>Introduction to Developmental Disabilities</td>
<td>3</td>
</tr>
<tr>
<td>ED 269</td>
<td>Introduction to Teaching the Learning Disabled Student</td>
<td>3</td>
</tr>
<tr>
<td>ESR 173  *</td>
<td>Environmental Science: Geological Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>ESR 174  *</td>
<td>Environmental Science: Chemical Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>MTH 211  *</td>
<td>Foundations of Elementary Math I</td>
<td>4</td>
</tr>
<tr>
<td>PSY 222  *</td>
<td>Family &amp; Intimate Relationships</td>
<td>4</td>
</tr>
<tr>
<td>PSY 240  *</td>
<td>Personal Awareness and Growth</td>
<td>4</td>
</tr>
<tr>
<td>SOC 213  *</td>
<td>Diversity in the United States</td>
<td>4</td>
</tr>
<tr>
<td>SOC 214A  *</td>
<td>Illumination Project: Tools for Creative Social Activism 1</td>
<td>4</td>
</tr>
<tr>
<td>SOC 214B  *</td>
<td>Illumination Project: Tools for Creative Social Activism 2</td>
<td>4</td>
</tr>
<tr>
<td>SOC 214C  *</td>
<td>Illumination Project: Tools for Creative Social Activism 3</td>
<td>4</td>
</tr>
<tr>
<td>SOC 218  *</td>
<td>Sociology of Gender</td>
<td>4</td>
</tr>
<tr>
<td>WR 122</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Up to 3 credits of American Sign Language</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Up to 3 credits of Foreign Language</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Up to 3 credits of ESOL</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Up to 3 credits of CG</td>
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<td></td>
</tr>
<tr>
<td>Up to 3 credits of MSD</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

* Could be used as General Education

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

1 Childcare Aide (p. 90)

### Childcare Aide Career Pathway Certificate

1 Minimum 22 credits. Students must meet all certificate requirements.

2 The Childcare Aide Career Pathway Certificate is a Career Pathway. All
courses are contained in the Early Education and Family Studies AAS Degree.

**Childcare Aide Certificate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 120</td>
<td>Introduction to Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 121</td>
<td>Observation and Guidance I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 122</td>
<td>Environments and Curriculum in Early Care and Ed I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 124</td>
<td>Multicultural Practices: Exploring Our Views</td>
<td>3</td>
</tr>
<tr>
<td>ECE 130A</td>
<td>Practicum Seminar 1</td>
<td>2</td>
</tr>
<tr>
<td>ECE 133</td>
<td>Practicum 1</td>
<td>3</td>
</tr>
<tr>
<td>HE 112</td>
<td>Standard First Aid and Emergency Care</td>
<td>1</td>
</tr>
<tr>
<td>HE 262</td>
<td>Children’s Health, Nutrition &amp; Safety</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 22

**Early Education and Family Studies Career Pathway Certificate**

Minimum 39 credits. Students must meet all certificate requirements. The Early Education and Family Studies Certificate is a Career Pathway. All courses are contained in the Early Education and Family Studies AAS Degree.

**Early Education and Family Studies Certificate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 120</td>
<td>Introduction to Early Education and Family Studies</td>
<td>3</td>
</tr>
<tr>
<td>ECE 121</td>
<td>Observation and Guidance I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 122</td>
<td>Environments and Curriculum in Early Care and Ed I</td>
<td>4</td>
</tr>
<tr>
<td>ECE 124</td>
<td>Environments and Curriculum in Early Care and Ed II</td>
<td>4</td>
</tr>
<tr>
<td>ECE 130A</td>
<td>Practicum Seminar 1</td>
<td>2</td>
</tr>
<tr>
<td>ECE 130B</td>
<td>Practicum Seminar 2</td>
<td>2</td>
</tr>
<tr>
<td>ECE 130C</td>
<td>Practicum Seminar 3</td>
<td>2</td>
</tr>
<tr>
<td>ECE 133</td>
<td>Practicum 1</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 131A</td>
<td>Practicum for Experienced Teachers 1</td>
<td>3</td>
</tr>
<tr>
<td>ECE 134</td>
<td>Practicum 2</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 131B</td>
<td>Practicum for Experienced Teachers 2</td>
<td>3</td>
</tr>
<tr>
<td>ECE 135</td>
<td>Practicum 3</td>
<td>3</td>
</tr>
<tr>
<td>or ECE 131C</td>
<td>Practicum for Experienced Teachers 3</td>
<td>3</td>
</tr>
<tr>
<td>HE 112</td>
<td>Standard First Aid and Emergency Care</td>
<td>1</td>
</tr>
<tr>
<td>HE 262</td>
<td>Children’s Health, Nutrition &amp; Safety</td>
<td>3</td>
</tr>
<tr>
<td>HEC 201</td>
<td>Family Partnerships in Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 39

1. Students with a valid CPR card may receive non-traditional credit.
2. Students must enroll in practicum seminar each term they take practicum.

**Economics**

Rock Creek Campus
Building 5, Room 245
971-722-7327

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

Sylvania Campus
Social Science Building (SS), Room 201
971-722-4289

www.pcc.edu/programs/economics/

**Description**

Economics is the study of how societies allocate their scarce resources. It examines individual and social action related to the use of limited resources toward the production, distribution, and consumption of goods and services. Economics students may complete two-year education programs, as well as transfer to four-year colleges and universities. Students may advance toward careers in both public and private sectors, and will actively engage in a wide range of economic, social, and political processes.

Courses at PCC introduce students to economics and prepare students for transfer into upper division courses. The transfer sequence consists of EC 201 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
Cascade Hall (CH), Room 103
971-722-5191, 971-722-5229 or 971-722-5970

www.pcc.edu/ed

**Career and Program Description**

PCC’s Education Department offers a Paraeducator Degree and 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 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.
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.

Students wishing to transfer into Teacher Education programs may wish to pursue an Associate of Arts Oregon Transfer Degree, transferable to four-year public universities and colleges in Oregon. They are allowed to take up to 12 credits from the Education Department as general electives. 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. Students will be expected to meet the same prerequisite in writing and be in good academic standing. Contact an Education Department advisor for more information.

Teacher relicensing candidates may use PCC education courses to meet state requirements. Education courses numbered 101 or higher may generally be used for relicensing. Contact Oregon Teacher Standards and Practices Commission at 503-378-3586 or www.oregon.gov/tspc for specific requirements. Interested students should also contact an Education Department advisor. 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.

The Library Assistant certificate has been suspended for the 2016-2017 academic year. All Library Assistant courses will be offered during the 2016-2017 academic year for students already enrolled in the program so that they may complete their certificate. For more information or availability of individual courses please contact the Education department.

**Degrees and Certificates Offered**

**Associate of Applied Science Degree**

**Paraeducator**

**One-Year Certificate**

**Paraeducator**

**Admission Prerequisites**

**Academic Prerequisites**

- Students are required to demonstrate competencies in writing, reading, mathematics and computer literacy (students must complete CAS 121 and CAS 133 or pass the competency).
- Admission to the paraeducator program requires an interview and application. Please contact an education advisor to pick up application materials and to set an appointment for the initial interview. When completing the application process, please bring photocopies of transcripts and the completed application form to the education department for review.

**Other Prerequisites**

- None

**Program Requirements**

**Academic Requirements**

- 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 enter the program at any point during the year. It is recommended that paraeducator degree and certificate students take ED 100 near the start of their studies and take ED 263 as a capstone course at the end.
- Students should be mindful that they must meet the math competency requirement in order to earn the degree.

**Other Requirements**

- Students may have to be fingerprinted and submit a criminal background check prior to practicum experiences in public schools.

**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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Paraeducator Degree Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 100</td>
<td>Introduction to Education for Paraeducators</td>
<td>3</td>
</tr>
<tr>
<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>
<td>3</td>
</tr>
<tr>
<td>ED 131</td>
<td>Applied Learning Theory</td>
<td>3</td>
</tr>
<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>
</tr>
<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>
</tr>
<tr>
<td>ED 258</td>
<td>Multicultural Education: Principles</td>
<td>6</td>
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<tr>
<td>ED 259</td>
<td>Multicultural Education: Applications</td>
<td></td>
</tr>
<tr>
<td>ED 263</td>
<td>Portfolio Development</td>
<td>2</td>
</tr>
<tr>
<td>ED 264</td>
<td>Portfolio Development II: AAS Paraeducator</td>
<td>1</td>
</tr>
<tr>
<td>ED 270</td>
<td>Practicum I</td>
<td>3</td>
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<tr>
<td>ED 271</td>
<td>Practicum II</td>
<td>3</td>
</tr>
<tr>
<td>ED 269</td>
<td>Introduction to Teaching the Learning</td>
<td>6</td>
</tr>
<tr>
<td>ED 290</td>
<td>Sheltered Instruction for English Language Learners</td>
<td>3</td>
</tr>
<tr>
<td>ED 291</td>
<td>Bilingual and ESL Strategies</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></td>
<td>Education Specialization Electives</td>
<td>9</td>
</tr>
</tbody>
</table>
Remaining General Education
Paraeducator General Education Program Electives 2
Paraeducator support electives 3
Total Credits
* 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 one course from each category.
3 Any PCC 100-299 level course.

Education Specialization Electives
ED 111 Library Collection Development 3
ED 112 Introduction to Children’s Literature 3
ED 114 Library Reference Services 3
ED 115 Storytelling 2
ED 116 Literature for Adolescents and Young Adults 3
ED 161 Leadership Through Advocacy and Representation 1
ED 162 Leadership Through Civic Engagement 2
ED 163 Personal Leadership Development 3
ED 206 Seminar: Advanced Education Techniques 3
ED 214 Practicum: Outdoor School 3
ED 217 Classroom Management 3
ED 218 Working with Paraeducators 3
ED 252 Behavior Management 3
ED 258 Multicultural Education: Principles 3
ED 259 Multicultural Education: Applications 3
ED 260 Multicultural Literature for Children and Young Adults 3
ED 268 Introduction to Developmental Disabilities 3
ED 269 Introduction to Teaching the Learning Disabled Student 3
ED 272 Practicum III 3
ED 290 Sheltered Instruction for English Language Learners 3
ED 291 Bilingual and ESL Strategies 3
PSY 215 Human Development 4
Total Credits 51

1 MTH 211 may be substituted

Electrical Trades
See Apprenticeship (p. 37)

Electronic Engineering Technology
Sylvania Campus
Science Technology Building (ST), Room 200
971-722-4159
www.pcc.edu/eet

Career and Program Description
Electronic Engineering Technology (EET) is concerned with the theory and practice of applied electronics engineering. Emphasis is placed on the practical application of engineering knowledge. To apply electronics engineering knowledge requires a thorough background in mathematics and science. EET graduates possess a combination of theoretical and practical understanding and require minimal on-the-job training to become productive.

Graduates of an Associate of Applied Science Degree program in EET are called electronic engineering technicians and find employment in circuits and systems testing, product development, prototype construction and testing, circuit and systems medication, systems operation and manufacturing. EET graduates are expected to have good communication skills and be capable of creative problem solving, working independently and in teams. They should have extensive knowledge of both the hardware and software of electronic systems.

Employers of EET engineering technicians include research and development laboratories, electronic equipment manufacturers, public utilities, colleges and universities, government agencies, medical laboratories and hospitals, electronic equipment distributors, semiconductor manufacturers and manufacturing and processing industries that use electronic control equipment and others.
Students can complete the EET degree and/or the EET options in Biomedical Engineering Technology, Wireless and Data Communications, Renewable Energy Systems, and Mechatronics/Automation/Robotics Engineering Technology. The EET department also offers two certificates - Renewable Energy Systems and Electronics Engineering Technology.

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
Electronics Engineering Technology

Less Than One-Year: Career Pathway Certificate
Renewable Energy Systems

Admission Prerequisites

Academic Prerequisites
• 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
  a. Completion of WR 121
  b. Placement into MTH 111 or higher
• Biomedical Engineering Technology AAS Degree
  a. Completion of WR 121
  b. Placement into MTH 111 or higher
  c. Completion of any medical terminology course 3 credits or higher.
  d. Completion of (BI 121 and BI 122) or (BI 231, BI 232, BI 233)
• Mechatronics/Automation/Robotic Engineering Technology AAS degree
  1. Completion of WR 121
  2. Placement into MTH 111 or higher
  3. Completion of CS 161
• Renewable Energy Systems AAS Degree
  1. Completion of WR 121
  2. Placement into MTH 111 or higher
• 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

Other Prerequisites
• All students must have an advising interview with an EET advisor.
• 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.

Program Requirements

Academic Requirements
• None

Other Requirements
• 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. Please check with the department for courses which transfer to Oregon Institute of Technology's BSEET degree.

Associate of Applied Science Degree
Electronic Engineering Technology (p. 94)
Electronic Engineering Technology: Biomedical Engineering Technology Option (p. 95)
Electronic Engineering Technology: Mechatronics/Automation/Robotics Engineering Technology Option (p. 95)
Electronic Engineering Technology: Renewable Energy Systems Option (p. 96)
Electronic Engineering Technology: Wireless and Data Communications Engineering Technology Option (p. 97)

Electronic Engineering 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 math course(s) required in the program of study. 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>EET 101</td>
<td>1</td>
</tr>
<tr>
<td>EET 111</td>
<td>5</td>
</tr>
<tr>
<td>EET 121</td>
<td>4</td>
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<tr>
<td>EET 188</td>
<td>1</td>
</tr>
<tr>
<td>MTH 111</td>
<td>5</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 112</td>
<td>5</td>
</tr>
<tr>
<td>EET 122</td>
<td>5</td>
</tr>
</tbody>
</table>
MTH 112*  
General Education: Social Science

**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 113</td>
<td>Electrical Power</td>
<td>5</td>
</tr>
<tr>
<td>EET 123</td>
<td>Digital Systems 3: Mixed-Signal Systems</td>
<td>5</td>
</tr>
<tr>
<td>EET 178</td>
<td>Computing Environments for Technicians</td>
<td>5</td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 221</td>
<td>Semiconductor Devices and Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 242</td>
<td>Microcontroller and Embedded Systems</td>
<td>4</td>
</tr>
<tr>
<td>PHY 201(^2)*</td>
<td>General Physics</td>
<td>4</td>
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</table>

General Ed: Arts & Letters

**Fifth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 222</td>
<td>Operational Amplifier Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 241</td>
<td>Programming for Electronics</td>
<td>4</td>
</tr>
<tr>
<td>EET 254</td>
<td>Electronic Engineering Technology Seminar</td>
<td>1</td>
</tr>
<tr>
<td>PHY 203(^3)*</td>
<td>General Physics</td>
<td>4</td>
</tr>
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</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 223</td>
<td>RF Communications Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 256</td>
<td>Capstone Project</td>
<td>2</td>
</tr>
<tr>
<td>or EET 280A</td>
<td>Cooperative Education: Electronics Engineering Technology</td>
<td></td>
</tr>
<tr>
<td>EET 272</td>
<td>Motors and Motor Controls</td>
<td>3</td>
</tr>
<tr>
<td>EET 273</td>
<td>Electronic Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>PHY 203(^4)*</td>
<td>General Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Credits: 96

* Could be used to as General Education
1 OSHA industrial safety training can be substituted
2 PHY 211 may be substituted
3 PHY 212 may be substituted
4 PHY 213 may be substituted

Recommended General Education (p. 97)

**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.

**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>EET 101</td>
<td>1</td>
</tr>
<tr>
<td>EET 111</td>
<td>5</td>
</tr>
<tr>
<td>EET 121</td>
<td>4</td>
</tr>
<tr>
<td>MTH 111(^1)</td>
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</tr>
<tr>
<td>General Education</td>
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</tbody>
</table>

Second Term

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

**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 113</td>
<td>Electrical Power</td>
<td>5</td>
</tr>
<tr>
<td>EET 123</td>
<td>Digital Systems 3: Mixed-Signal Systems</td>
<td>5</td>
</tr>
<tr>
<td>EET 178</td>
<td>Computing Environments for Technicians</td>
<td>5</td>
</tr>
<tr>
<td>General Ed: Arts &amp; Letters</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>EET 221</td>
<td>Semiconductor Devices and Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 242</td>
<td>Microcontroller and Embedded Systems</td>
<td>4</td>
</tr>
<tr>
<td>EET 260</td>
<td>Biomedical Equipment I</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 222</td>
<td>Operational Amplifier Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 254</td>
<td>Electronic Engineering Technology Seminar</td>
<td>1</td>
</tr>
<tr>
<td>EET 261</td>
<td>Biomedical Equipment II</td>
<td>4</td>
</tr>
<tr>
<td>EET 280C</td>
<td>Cooperative Education: BMET Practicum</td>
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</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 278(^2)</td>
<td>Data Communication Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>EET 223</td>
<td>RF Communications Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 273</td>
<td>Electronic Control Systems</td>
<td>3</td>
</tr>
<tr>
<td>EET 280C</td>
<td>Cooperative Education: BMET Practicum</td>
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</tr>
</tbody>
</table>

Total Credits: 102

* Could be used as General Education
1 OSHA industrial safety training can be substituted
2 Or EET 241 - Programming for Electronics

Recommended General Education (p. 97)

**Mechatronics/Automation/Robotics Engineering Technology 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.

**Course of Study**

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

**Summer Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Ed: Arts &amp; Letters</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**First Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>Introduction to Electronic Testing Equipment/Soldering/Tools</td>
<td>1</td>
</tr>
<tr>
<td>EET 111</td>
<td>Electrical Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td>EET 121</td>
<td>Digital Systems 1</td>
<td>4</td>
</tr>
<tr>
<td>MTH 111(^1)</td>
<td>College Algebra</td>
<td>5</td>
</tr>
</tbody>
</table>

General Education
**College Algebra**

**Second Term**
- EET 112: Electrical Circuit Analysis II 5
- EET 188: Industrial Safety 1
- ELT 125: Basic Programmable Controllers 2
- MTH 112*: College Algebra 5

**Third Term**
- EET 113: Electrical Power 5
- EET 123: Digital Systems 3: Mixed-Signal Systems 5
- EET 178: Computing Environments for Technicians 5
- ELT 126: Intermediate Programmable Controllers (PC Based) 2

**Fourth Term**
- EET 221: Semiconductor Devices and Circuits 5
- EET 242: Microcontroller and Embedded Systems 4
- ELT 225: Advanced Programmable Controllers, PC Based 2
- PHY 201*: General Physics 4

**Fifth Term**
- EET 222: Operational Amplifier Circuits 5
- EET 241: Programming for Electronics 4
- EET 254: Electronic Engineering Technology Seminar 1
- PHY 202*: General Physics 4
- RES Program Electives 3

**Sixth Term**
- CMET 213: Fluid Mechanics 3
- EET 223: RF Communications Circuits 5
- EET 272: Motors and Motor Controls 3
- EET 273: Electronic Control Systems 3
- PHY 203*: General Physics 4

Total Credits: 107

* Could be used as General Education

---

**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.

**Course of Study**

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

**Summer Term**
- General Ed: Social Science 3

**First Term**
- EET 101: Introduction to Electronic Testing 1
- EET 111: Electrical Circuit Analysis I 5
- EET 121: Digital Systems 1 4
- MTH 111*: College Algebra 5

**Second Term**
- EET 112: Electrical Circuit Analysis II 5
- EET 188*: Industrial Safety 1
- ELT 125*: Basic Programmable Controllers 2
- MTH 112*: Elementary Functions 5

**Third Term**
- EET 113: Electrical Power 5
- EET 123: Digital Systems 3: Mixed-Signal Systems 5
- EET 178: Computing Environments for Technicians 5
- ELT 126: Intermediate Programmable Controllers (PC Based) 2

**Fourth Term**
- EET 221: Semiconductor Devices and Circuits 5
- EET 242: Microcontroller and Embedded Systems 4
- ELT 225: Advanced Programmable Controllers, PC Based 2
- PHY 201*: General Physics 4
- General Ed: Arts & Letters 3

**Fifth Term**
- EET 222: Operational Amplifier Circuits 5
- EET 241: Programming for Electronics 4
- EET 254: Electronic Engineering Technology Seminar 1
- PHY 202: General Physics 4
- RES Program Electives 3

**Sixth Term**
- CMET 213*: Fluid Mechanics 3
- EET 223: RF Communications Circuits 5
- EET 256: Capstone Project 2
- or EET 280A: Cooperative Education: Electronics Engineering Technology
- EET 272: Motors and Motor Controls 3
- EET 273: Electronic Control Systems 3

Total Credits: 107

* Could be used as General Education

---

**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.**

---

**Could be used as General Education**

---

**OSHA industrial safety training can be substituted**

---

**REE 201 of Oregon Tech can substitute**

---

**PHY 211 may be substituted**

---

**PHY 212 may be substituted**

---

**EET students are exempted from satisfying catalog prerequisites for this course. To register for CMET 213, students must 1) successfully complete MTH 112 and PHY 202; and 2) obtain CMET department advisor approval.**
EET students are exempted from satisfying catalog prerequisites for this course. To register for ELT 125, students must 1) successfully complete EET 111; and 2) obtain ELT/Apprentice-ship department advisor approval.

Renewable Energy Systems Program Electives

**Wind Power**
- 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 Voltalic Processing 1

Recommended General Education (p. 97)

**Wireless and Data Communications Engineering 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 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 Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 101</td>
<td>Introduction to Electronic Testing</td>
<td>1</td>
</tr>
<tr>
<td>EET 111</td>
<td>Electrical Circuit Analysis I</td>
<td>5</td>
</tr>
<tr>
<td>EET 121</td>
<td>Digital Systems 1</td>
<td>4</td>
</tr>
<tr>
<td>MTH 111*</td>
<td>College Algebra</td>
<td>5</td>
</tr>
</tbody>
</table>

### Second Term

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

### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EET 113</td>
<td>Electrical Power</td>
<td>5</td>
</tr>
<tr>
<td>EET 123</td>
<td>Digital Systems 3: Mixed-Signal Systems</td>
<td>5</td>
</tr>
<tr>
<td>EET 178</td>
<td>Computing Environments for Technicians</td>
<td>5</td>
</tr>
<tr>
<td>General Ed: Social Science</td>
<td>3</td>
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</tr>
</tbody>
</table>

### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>EET 221</td>
<td>Semiconductor Devices and Circuits</td>
<td>5</td>
</tr>
<tr>
<td>EET 242</td>
<td>Microcontroller and Embedded Systems</td>
<td>4</td>
</tr>
<tr>
<td>General Ed: Arts &amp; Letters</td>
<td>3</td>
<td></td>
</tr>
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### Fifth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CIS 188</td>
<td>Introduction to Wireless Networking</td>
<td>4</td>
</tr>
<tr>
<td>EET 222</td>
<td>Operational Amplifier Circuits</td>
<td>5</td>
</tr>
</tbody>
</table>

### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EET 241</td>
<td>Programming for Electronics</td>
<td>4</td>
</tr>
<tr>
<td>EET 254</td>
<td>Electronic Engineering Technology Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

### Recommended General Education

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

### One-Year Certificate

Electronic Engineering Technology (p. 97)

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

Renewable Energy Systems (p. 98)

### Electronic Engineering Technology One-Year Certificate

Minimum 54 credits. Students must meet all certificate requirements.

**Course of Study**

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

### Summer Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Related Instruction Human Relations Electives</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
First Term
EET 101  Introduction to Electronic Testing  1
EET 111  Electrical Circuit Analysis I  3
EET 121  Digital Systems I  4
MTH 111*  College Algebra  5

Second Term
EET 112  Electrical Circuit Analysis II  5
EET 122  Digital Systems 2: Computing Systems  5
MTH 112*  Elementary Functions  5

Third Term
EET 113  Electrical Power  5
EET 123  Digital Systems 3: Mixed-Signal Systems  5
EET 178  Computing Environments for Technicians  5
EET 1881  Industrial Safety  1

Total Credits: 54

* Could be used for General Education

1 OSHA industrial training can be substituted

Related Instruction Human Relations Electives
CG 191  Exploring Identity and Diversity for College Success  4
PSY 101  Psychology and Human Relations  4
PSY 201A  Introduction to Psychology - Part 1  4
PSY 202A  Introduction to Psychology - Part 2  4
PSY 214  Introduction to Personality  4
PSY 215  Human Development  4
PSY 216  Social Psychology  4
PSY 222  Family & Intimate Relationships  4
PSY 231  Human Sexuality  4
PSY 232  Human Sexuality  4
PSY 236  Psychology of Adult Development and Aging  4
PSY 239  Introduction to Abnormal Psychology  4
PSY 240  Personal Awareness and Growth  4
SOC 204  Sociology in Everyday Life  4
SOC 206  Social Problems  4
SOC 213  Diversity in the United States  4
SOC 218  Sociology of Gender  4
SOC 232  Death and Dying: Culture and Issues  4
WS 101  Women’s Studies  4

Minimum 44 credits. Students must meet all certificate requirements. The Renewable Energy Systems Certificate is a Career Pathway. All courses are contained in the Renewable Energy Systems AAS Degree.

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

First Term
1  EET 101  Introduction to Electronic Testing  1
   Equipment/Soldering/Tools
5  EET 1102  Introduction to Renewable Energy  3
4  EET 111  Electrical Circuit Analysis I  5
5  EET 121  Digital Systems I  4
5  MTH 111  College Algebra  5

Second Term
5  EET 112  Electrical Circuit Analysis II  5
5  EET 122  Digital Systems 2: Computing Systems  5
5  MTH 112  Elementary Functions  5
5  Renewable Energy Systems Program Electives  3

Third Term
5  EET 113  Electrical Power  5
5  EET 1881  Industrial Safety  1
2  ELT 1253  Basic Programmable Controllers  2

Total Credits: 44

1 OSHA industrial safety training can be substituted.
2 REE 201 at OIT can substitute for EET 110.
3 EET students are exempted from satisfying catalog prerequisites for this course. To register for ELT 125, students must 1) successfully complete EET 111; and 2) obtain ELT/Apprentice-ship department advisor approval.

Renewable Energy Systems Program Electives
Wind Power: 2
4  EET 179  Fuel Cell Systems  3
4  EET 269  Wind Mechanics  3

Solar Manufacturing:
4  MT 101  Introduction to Semiconductor Manufacturing  1
4  MT 102  Introduction to Semiconductor Devices  1
4  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
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

**One-Year Certificate**
Emergency Management

**Admission Prerequisites**

**Academic Prerequisites**
- Students must pass all prerequisites courses with a "C" or "P" or better in order to enroll in any EM courses with a "200" or higher designator.
- 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.

**Other Prerequisites**
- None

**Program Requirements**

**Academic Requirements**
- None

**Other Requirements**
- None

**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 58/65 competency (p. 13). 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 Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJA 101</td>
<td>Cultural Diversity in Criminal Justice Professions</td>
<td>3</td>
</tr>
<tr>
<td>EM 101</td>
<td>Introduction to Emergency Services</td>
<td>4</td>
</tr>
<tr>
<td>EM 110</td>
<td>Theory of Emergency Management</td>
<td>3</td>
</tr>
<tr>
<td>EM 114</td>
<td>History of U.S. Hazards, Disasters and Emergency Management</td>
<td>4</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EM 103</td>
<td>Information Systems of Emergency Management</td>
<td>3</td>
</tr>
<tr>
<td>EM 203</td>
<td>Disaster Response I</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHL 191</td>
<td>Analysis &amp; Evaluation of Argument</td>
<td>4</td>
</tr>
<tr>
<td>PS 203</td>
<td>State and Local Government</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>EM 202</td>
<td>Hazard Mitigation</td>
<td>3</td>
</tr>
<tr>
<td>EM 204</td>
<td>Disaster Response II</td>
<td>4</td>
</tr>
<tr>
<td>EM 215</td>
<td>Crisis Intervention &amp; Critical Incident Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>HUM 221</td>
<td>Leadership Development</td>
<td>4</td>
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</tbody>
</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COM 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>EM 201</td>
<td>Disaster Planning &amp; Preparedness</td>
<td>4</td>
</tr>
<tr>
<td>EM 211</td>
<td>Public Policy &amp; Law in Emergency Management</td>
<td>3</td>
</tr>
<tr>
<td>MSD 101</td>
<td>Principles of Management and Supervision</td>
<td>3</td>
</tr>
</tbody>
</table>

**Fifth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 205</td>
<td>Disaster Recovery</td>
<td>3</td>
</tr>
<tr>
<td>EM 221</td>
<td>Business Continuity or Resumption of Operations Planning</td>
<td>3</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
<td>4</td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical and Professional Writing 1</td>
<td>4</td>
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</tbody>
</table>

**Sixth Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EM 222</td>
<td>Disaster Exercise Design and Evaluation</td>
<td>3</td>
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<tr>
<td>EM 223</td>
<td>Terrorism</td>
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<tr>
<td>General Education</td>
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</tr>
</tbody>
</table>

Total Credits: 97

* Could be used as General Education

**Emergency Management Program Electives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ATH 101</td>
<td>Introduction to Physical Anthropology</td>
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</tr>
<tr>
<td>ATH 103</td>
<td>Introduction to Cultural Anthropology</td>
<td>4</td>
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<tr>
<td>ATH 207</td>
<td>Cultural Anthropology: Culture Concepts</td>
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<tr>
<td>ATH 208</td>
<td>Cultural Anthropology: Cultures of the World</td>
<td>4</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
<td>4</td>
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<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
<td>4</td>
</tr>
<tr>
<td>BA 277</td>
<td>Business Practices and Contemporary Social Issues</td>
<td>4</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 151</td>
<td>Microsoft Outlook</td>
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</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 171</td>
<td>Intermediate Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 206</td>
<td>Principles of HTML and CSS</td>
<td>4</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
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<tr>
<td>CAS 217</td>
<td>Intermediate Word</td>
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<tr>
<td>CAS 220</td>
<td>Project Management - Beginning MS Project</td>
<td>3</td>
</tr>
<tr>
<td>CAS 231</td>
<td>Publisher</td>
<td>3</td>
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<tr>
<td>CAS 232</td>
<td>Desktop Publishing: InDesign</td>
<td>3</td>
</tr>
<tr>
<td>CAS 246</td>
<td>Integrated Computer Projects</td>
<td>4</td>
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<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
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<tr>
<td>CIS 121</td>
<td>Computer Concepts II</td>
<td>4</td>
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<tr>
<td>CJA 100</td>
<td>Professions in Criminal Justice</td>
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<tr>
<td>CJA 101</td>
<td>Cultural Diversity in Criminal Justice</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 113</td>
<td>Introduction to the Criminal Justice System - Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJA 244</td>
<td>Tactical Communication in Crisis Incidents</td>
<td>4</td>
</tr>
<tr>
<td>COMM 100</td>
<td>Introduction to Communication</td>
<td>3</td>
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<tr>
<td>COMM 101</td>
<td>Oral Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>COMM 105</td>
<td>Listening</td>
<td>3</td>
</tr>
<tr>
<td>COMM 110</td>
<td>Voice and Articulation</td>
<td>3</td>
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<tr>
<td>COMM 112</td>
<td>Persuasive Speaking</td>
<td>3</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>
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Any EM course not required of the degree or certificate may be used to fulfill an elective requirement.

* Could be used as General Education

# Emergency Management One-Year Certificate

Minimum 51 credits. Students must meet all certificate requirements.

## Emergency Management Certificate Courses

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<td>Disaster Planning &amp; Preparedness</td>
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<td>EMS 120</td>
<td>Emergency Medical Services: First Responder</td>
<td>3</td>
</tr>
<tr>
<td>ESR 140</td>
<td>Introduction to Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>ESR 141</td>
<td>Introduction to Individual Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>ESR 160</td>
<td>Intro to Environmental Systems</td>
<td>3</td>
</tr>
<tr>
<td>ESR 171</td>
<td>Environmental Science: Biological Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>ESR 172</td>
<td>Environmental Science: Chemical Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>ESR 173</td>
<td>Environmental Science: Geological Perspectives</td>
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</tr>
<tr>
<td>FP 101</td>
<td>Principles of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FP 122</td>
<td>Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FP 123</td>
<td>Hazardous Materials Awareness and Operations</td>
<td>3</td>
</tr>
<tr>
<td>FP 133</td>
<td>Wildland Firefighter</td>
<td>3</td>
</tr>
<tr>
<td>G 160</td>
<td>Geology: Oregon Coast</td>
<td>3</td>
</tr>
<tr>
<td>G 161</td>
<td>Geology: Great Basin/Cascades</td>
<td>3</td>
</tr>
<tr>
<td>G 201 *</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>G 202</td>
<td>Physical Geology</td>
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</tr>
<tr>
<td>G 203</td>
<td>Historical Geology</td>
<td>3</td>
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<tr>
<td>G 207</td>
<td>Geology of the Pacific Northwest</td>
<td>3</td>
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<tr>
<td>G 208</td>
<td>Volcanoes and Their Activity</td>
<td>3</td>
</tr>
<tr>
<td>G 209</td>
<td>Earthquakes</td>
<td>3</td>
</tr>
<tr>
<td>G 200F</td>
<td>Geology Field Studies: Pacific Northwest Coast</td>
<td>3</td>
</tr>
<tr>
<td>G 200E</td>
<td>Geology Field Studies: Mount St. Helens</td>
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<tr>
<td>G 200G</td>
<td>Geology Field Studies Columbia River Gorge</td>
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</tr>
<tr>
<td>GEO 105</td>
<td>Introduction to Human Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEO 106</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEO 107</td>
<td>Geography of Global Issues</td>
<td>4</td>
</tr>
<tr>
<td>GEO 203</td>
<td>Geography of Middle East</td>
<td>4</td>
</tr>
<tr>
<td>GEO 204</td>
<td>Geography of Oregon</td>
<td>4</td>
</tr>
<tr>
<td>GEO 205</td>
<td>Physical Geography: Weather and Climate</td>
<td>4</td>
</tr>
<tr>
<td>GEO 206</td>
<td>The Natural Environment</td>
<td>4</td>
</tr>
<tr>
<td>GEO 209</td>
<td>Field Geography: The Local Landscape</td>
<td>4</td>
</tr>
<tr>
<td>GEO 210</td>
<td>Field Geography: GPS &amp; GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEO 221</td>
<td>Geography of Race &amp; Ethnic Conflicts</td>
<td>4</td>
</tr>
<tr>
<td>GEO 223</td>
<td>Maps &amp; Geospatial Concepts</td>
<td>4</td>
</tr>
<tr>
<td>GEO 230</td>
<td>Introduction to GIS (Geographical Information Systems)</td>
<td>4</td>
</tr>
<tr>
<td>GEO 256</td>
<td>GIS Analysis</td>
<td>4</td>
</tr>
<tr>
<td>GEO 265</td>
<td>Application Topics in Geographic Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>GS 105</td>
<td>Physical Science (Geology)</td>
<td>4</td>
</tr>
<tr>
<td>GS 106</td>
<td>Physical Science (Astronomy)</td>
<td>4</td>
</tr>
<tr>
<td>GS 107</td>
<td>Physical Science (Oceanography)</td>
<td>4</td>
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<td>GS 108</td>
<td>Physical Science (Meteorology)</td>
<td>4</td>
</tr>
<tr>
<td>HST 102</td>
<td>History of Western Civilization: Medieval to Modern</td>
<td>4</td>
</tr>
<tr>
<td>HST 201</td>
<td>History of the United States to 1840</td>
<td>4</td>
</tr>
<tr>
<td>HST 203</td>
<td>History of the United States 1914 to Present</td>
<td>4</td>
</tr>
<tr>
<td>HST 240</td>
<td>Oregon History</td>
<td>4</td>
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<tr>
<td>HUM 100</td>
<td>Introduction to Humanities</td>
<td>4</td>
</tr>
<tr>
<td>HUM 201</td>
<td>Humanities &amp; Technology: Exploring Origins</td>
<td>4</td>
</tr>
<tr>
<td>HUM 202</td>
<td>Humanities &amp; Technology: Contemporary Issues</td>
<td>4</td>
</tr>
<tr>
<td>HUM 203</td>
<td>Humanities &amp; Technology: Future Directions</td>
<td>4</td>
</tr>
<tr>
<td>HUM 214</td>
<td>Race and Racism</td>
<td>4</td>
</tr>
<tr>
<td>MSD 105</td>
<td>Workplace Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MSD 106</td>
<td>Organizations &amp; People</td>
<td>3</td>
</tr>
<tr>
<td>MSD 111</td>
<td>Workplace Correspondence</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 119A</td>
<td>Intercultural Communication</td>
<td>1</td>
</tr>
<tr>
<td>MSD 122</td>
<td>Motivation Without Manipulation</td>
<td>1</td>
</tr>
<tr>
<td>MSD 122A</td>
<td>Strength Based Leadership</td>
<td>1</td>
</tr>
<tr>
<td>MSD 123</td>
<td>Job Search Strategies</td>
<td>1</td>
</tr>
<tr>
<td>MSD 123A</td>
<td>Innovation and New Products</td>
<td>1</td>
</tr>
<tr>
<td>MSD 128</td>
<td>Crisis Intervention: Handling the Difficult Person</td>
<td>1</td>
</tr>
<tr>
<td>MSD 130</td>
<td>Creative Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MSD 133</td>
<td>Brave New Workplace: Strategies to Excel in World of Change</td>
<td>1</td>
</tr>
<tr>
<td>MSD 138B</td>
<td>Exploring the 7 Habits of Highly Effective People</td>
<td>1</td>
</tr>
<tr>
<td>MSD 141A</td>
<td>The Time-Stress-Communication Triangle</td>
<td>1</td>
</tr>
<tr>
<td>MSD 148</td>
<td>Asserting Yourself in the Workplace</td>
<td>1</td>
</tr>
<tr>
<td>MSD 150</td>
<td>Listening Skills</td>
<td>1</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>
</tbody>
</table>
Emergency Medical Services

Cascade Campus

Any EM course not required of the degree or certificate may be used to fulfill an elective requirement.

* Could be used as General Education

1 Public Services Education Building (PSEB), Room 133
1 971-722-5707
1 971-722-5535 (Fax)
1 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, or Paramedic training, the student is eligible to apply to take the respective state licensure exams.

The Emergency Medical Services (EMS) 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.

The Portland Community College Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

To contact CAAHEP:

Commission on Accreditation of Allied Health Education Programs
1361 Park Street
Clearwater, FL 33756
www.caahep.org

To contact CoAEMSP:

8301 Lakeview Parkway, Suite 111-312
Rowlett, TX 75088
(214) 703-8445
FAX (214) 703-8992
www.coaemsp.org

Degrees and Certificates Offered

Associate of Applied Science Degree
Emergency Medical Technician-Paramedic

One-Year Certificate
Emergency Medical Services

Less Than One-Year Certificate
Advanced Emergency Medical Technician

Less Than One-Year Certificate: Career Pathway
Emergency Medical Services

Admission Prerequisites

Academic Prerequisites
• 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.
• Applicants for EMS courses must meet all prerequisites prior to registration into EMS courses.
• Submit photocopies of transcripts, immunization documentation and completed application to the EMS Department for review. Contact department office for instructions. Incomplete applications will not be accepted. Applicants for the paramedic level must complete a departmental selection process.

Other Prerequisites
• 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) or ASHI CPR-Pro card current through certification/licensure testing.

Program Requirements

Academic Requirements
• Attendance of the first session of each course is mandatory. Students missing the first class will be dropped from the roster by the department.

Other Requirements
• 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 is the responsibility of the applicant/student.
• 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 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. 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.

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>EMS 100</td>
<td>Introduction to Emergency Medical Services</td>
</tr>
<tr>
<td>PSY 101 (or higher)</td>
<td>Psychology and Human Relations</td>
</tr>
<tr>
<td>WR 121 (or higher)</td>
<td>English Composition</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 231</td>
<td>Human Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>COMM 111 (or higher)</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>EMS 105</td>
<td>EMT Part I</td>
</tr>
<tr>
<td>MTH 65 (or higher)</td>
<td>Introductory Algebra - Second Term</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 232</td>
<td>Human Anatomy &amp; Physiology II</td>
</tr>
<tr>
<td>EMS 106</td>
<td>EMT Part II</td>
</tr>
<tr>
<td>EMS 116</td>
<td>Emergency Medical Services Rescue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 233</td>
<td>Human Anatomy &amp; Physiology III</td>
</tr>
<tr>
<td>EMS 113</td>
<td>Emergency Response Communication/Documentation</td>
</tr>
<tr>
<td>EMS 114</td>
<td>Emergency Response Patient Transportation</td>
</tr>
</tbody>
</table>
EMS 115  | Crisis Intervention  | 3
MP 111  | Medical Terminology  | 4
General Education

**Fifth Term**
EMS 240  | Paramedic I  | 12

**Sixth Term**
EMS 242  | Paramedic II  | 4
EMS 244  | Paramedic Clinical Internship I  | 3

**Seventh Term**
EMS 246  | Paramedic Clinical Internship II  | 5
EMS 248  | Paramedic Field Internship I  | 2
HE 295  | Health and Fitness for Life  | 2
PE 295  | Health and Fitness for Life Lab  | 1

**Eighth Term**
EMS 250  | Paramedic Field Internship II  | 7
EMS 252  | Paramedic III  | 2

Total Credits: 106

* Could be used as General Education

### One-Year Certificate
Emergency Medical Services (p. 105)

### Less than One-Year Certificate
Advanced Emergency Medical Technician (p. 105)

### Less than One-Year: Career Pathway Certificate
Emergency Medical Services (p. 105)

### Emergency Medical Services One-Year Certificate
Minimum 59 credits. Students must meet all certificate requirements.

#### 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>Introduction to Emergency Medical Services</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</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>Human Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>EMS 105</td>
<td>EMT Part I</td>
</tr>
<tr>
<td>MTH 65</td>
<td>Introductory Algebra - Second Term</td>
</tr>
</tbody>
</table>

**Third Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 232</td>
<td>Human Anatomy &amp; Physiology II</td>
</tr>
<tr>
<td>EMS 106</td>
<td>EMT Part II</td>
</tr>
<tr>
<td>EMS 116</td>
<td>Emergency Medical Services Rescue</td>
</tr>
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</table>

**Fourth Term**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI 233</td>
<td>Human Anatomy &amp; Physiology III</td>
</tr>
<tr>
<td>EMS 113</td>
<td>Emergency Response Communication/Documentation</td>
</tr>
<tr>
<td>EMS 114</td>
<td>Emergency Response Patient Transportation</td>
</tr>
<tr>
<td>EMS 115</td>
<td>Crisis Intervention</td>
</tr>
<tr>
<td>MP 111</td>
<td>Medical Terminology</td>
</tr>
</tbody>
</table>

Total Credits: 59

### Advanced Emergency Medical Technician Less than One-Year Certificate
Minimum 20 credits. Students must meet all certificate requirements.

### Advanced Emergency Medical Technician Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 105</td>
<td>EMT Part I</td>
</tr>
<tr>
<td>EMS 106</td>
<td>EMT Part II</td>
</tr>
<tr>
<td>EMS 135</td>
<td>Advanced EMT Part 1 (Advanced EMT Part 1)</td>
</tr>
<tr>
<td>EMS 136</td>
<td>Advanced EMT Part 2 (Advanced EMT Part 2)</td>
</tr>
</tbody>
</table>

Total Credits: 20

### Emergency Medical Services Career Pathway Certificate
Minimum 24 credits. Students must meet all certificate requirements. The Emergency Medical Services Certificate is a career pathway. All courses are contained in the Emergency Medical Technician-Paramedic AAS Degree.

### Emergency Medical Services Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 100</td>
<td>Introduction to Emergency Medical Services</td>
</tr>
<tr>
<td>EMS 105</td>
<td>EMT Part I</td>
</tr>
<tr>
<td>EMS 106</td>
<td>EMT Part II</td>
</tr>
<tr>
<td>EMS 113</td>
<td>Emergency Response Communication/Documentation</td>
</tr>
<tr>
<td>EMS 114</td>
<td>Emergency Response Patient Transportation</td>
</tr>
<tr>
<td>EMS 116</td>
<td>Emergency Medical Services Rescue</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition (or higher)</td>
</tr>
</tbody>
</table>

Total Credits: 24

### Employment Skills Training

#### Career and Program Description
This is 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 12 credits and a maximum of 44 and must be completed within 2 years.
Less than One-Year Certificate
Employment Skills Training

Prerequisites and Requirements

ADMISSION PREREQUISITES

Academic Prerequisites

• 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.

Other Prerequisites

• 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.
• "Next steps" for continuing the educational process will be discussed and reviewed by the student, the faculty advisor, and possibly the employer.

PROGRAM REQUIREMENTS

Academic Requirements

• Prerequisite requirements for each employment skills training certificate are determined by the career technical department.

Other Requirements

• None

Engineering

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

Career and Program Description

Engineering is a profession in which knowledge of mathematics and the sciences, gained through study and experience, is applied for the benefit of society. Engineers solve technical problems as members of project teams or as individual specialists. Work may involve research, development, planning, design, construction, manufacturing, supervision and management. Engineering is a licensed profession in all states.

PCC offers curricula equivalent to the first two years of study for most engineering disciplines at Oregon State University (OSU), Portland State University (PSU), the University of Portland (UP), Washington State University-Vancouver (WSUV) and Oregon Institute of Technology (OIT). These engineering disciplines include: Chemical Engineering, Civil Engineering, Computer Engineering, Construction Engineering Management, Electrical Engineering, Environmental Engineering, Industrial Engineering, Manufacturing Engineering, Mechanical Engineering and Renewable Energy Engineering.

Equivalent first and second year courses are also available for students interested in other majors or universities. (Note: not all majors listed are available at all the institutions listed.)

Advising guides outlining which engineering, mathematics, science and general education courses to take for the disciplines listed above have been prepared in cooperation with OSU, PSU, 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. 12) section of this catalog for information concerning the granting of degrees.

Admission Prerequisites

Academic Prerequisites

• 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 151, 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 visit www.pcc.edu/programs/engineering-transfer/ for more information.

Other Prerequisites

• None

Program Requirements

Academic Requirements

• None

Other Requirements

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

English/Literature

See the Course Description (p. 133) (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. Scott Hall (MSH), Room 106
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 (JH), Room 210
971-722-5209

Rock Creek Campus

Facilities Maintenance Technology - HVAC/R

Swan Island Trades Center
Room 109
6400 North Cutter Circle, Portland OR, 97217
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 semiconductor industry, large healthcare 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 troubleshooting 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

Admission Prerequisites

Academic Prerequisites

- It is required that students place into MTH 20, into WR 90 or higher and RD 90 or higher. Individual course prerequisites are listed in the course descriptions.

Other Prerequisites

- None

Program Requirements

Academic Requirements

- None

Other Requirements

- None

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. 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.

Facilities Maintenance Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>APR 162 §</td>
<td>Calculations for the Trades</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 162</td>
<td>Commercial Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>ELT 125</td>
<td>Basic Programmable Controllers</td>
<td>2</td>
</tr>
<tr>
<td>ELT 126</td>
<td>Intermediate Programmable Controllers (PC Based)</td>
<td>2</td>
</tr>
<tr>
<td>ELT 201</td>
<td>Electrical Motor Control</td>
<td>2</td>
</tr>
<tr>
<td>ELT 204</td>
<td>Adjustable Speed Drives</td>
<td>2</td>
</tr>
<tr>
<td>ELT 220</td>
<td>OSHA 30 Hr Safety Training</td>
<td>3</td>
</tr>
<tr>
<td>ELT 225</td>
<td>Advanced Programmable Controllers, PC Based</td>
<td>2</td>
</tr>
<tr>
<td>FMT 100</td>
<td>Introduction to Facilities Maintenance Systems</td>
<td>2</td>
</tr>
<tr>
<td>FMT 101</td>
<td>Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 102</td>
<td>Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 103</td>
<td>Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 111</td>
<td>Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 112</td>
<td>Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 113</td>
<td>Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 119</td>
<td>Water Treatment and Distribution</td>
<td>2</td>
</tr>
<tr>
<td>FMT 122</td>
<td>Introduction to Boilers</td>
<td>3</td>
</tr>
<tr>
<td>FMT 125</td>
<td>Natural Gas Equipment I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 201</td>
<td>Introduction to Chiller Systems</td>
<td>3</td>
</tr>
<tr>
<td>FMT 202</td>
<td>Direct Digital Control Advanced Technology</td>
<td>3</td>
</tr>
<tr>
<td>FMT 207</td>
<td>Pneumatic Controls</td>
<td>2</td>
</tr>
<tr>
<td>FMT 222</td>
<td>Intermediate Boilers</td>
<td>3</td>
</tr>
<tr>
<td>FMT 280A</td>
<td>Cooperative Work Experience</td>
<td>8</td>
</tr>
<tr>
<td>PHY 101 *</td>
<td>Fundamentals of Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PSY 101 *</td>
<td>Psychology and Human Relations</td>
<td>4</td>
</tr>
<tr>
<td>FMT Electives</td>
<td></td>
<td>11</td>
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<tr>
<td>Remaining General Education</td>
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<td>8</td>
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<tr>
<td>Total Credits</td>
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<td>90</td>
</tr>
</tbody>
</table>

* Could be used as General Education

§ Course cannot be substituted for another course.

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. 109)

Less than One-Year: Career Pathway Certificate

HVAC/R Installer (p. 109)
Oregon State Bureau of Labor and Industries Approved Pre-Apprenticeship Training

Facilities Maintenance Less Than One-Year Certificate

Minimum 44 credits. Students must meet all certificate requirements.

Facilities Maintenance Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 162</td>
<td>Commercial Print Reading</td>
<td>2</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</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 Systems</td>
<td>2</td>
</tr>
<tr>
<td>FMT 101</td>
<td>Refrigeration I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 102</td>
<td>Refrigeration II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 103</td>
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<td>2</td>
</tr>
<tr>
<td>FMT 111</td>
<td>Refrigeration Electrical I</td>
<td>3</td>
</tr>
<tr>
<td>FMT 112</td>
<td>Refrigeration Electrical II</td>
<td>3</td>
</tr>
<tr>
<td>FMT 113</td>
<td>Refrigeration Electrical III</td>
<td>3</td>
</tr>
<tr>
<td>FMT 119</td>
<td>Water Treatment and Distribution</td>
<td>3</td>
</tr>
<tr>
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<td>FMT 125</td>
<td>Natural Gas Equipment I</td>
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<tr>
<td>FMT 201</td>
<td>Introduction to Chiller Systems</td>
<td>2</td>
</tr>
<tr>
<td>FMT 202</td>
<td>Direct Digital Control Advanced Technology</td>
<td>2</td>
</tr>
<tr>
<td>FMT 222</td>
<td>Intermediate Boilers</td>
<td>2</td>
</tr>
<tr>
<td>FMT Program Electives</td>
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</tr>
<tr>
<td>Total Credits</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, 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

HVAC/R Installer Career Pathway Certificate

Minimum 14 credits. Students must meet all certificate requirements. The HVAC/R Installer Certificate is a Career Pathway. All courses for the certificate are contained in the Facilities Maintenance AAS Degree.

HVAC/R Installer Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</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>
<tr>
<td>FMT 103</td>
<td>Refrigeration III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 111</td>
<td>Refrigeration Electrical I</td>
<td>2</td>
</tr>
<tr>
<td>FMT 112</td>
<td>Refrigeration Electrical II</td>
<td>2</td>
</tr>
<tr>
<td>FMT 113</td>
<td>Refrigeration Electrical III</td>
<td>2</td>
</tr>
<tr>
<td>FMT 210</td>
<td>Basic HVAC/R Installation &amp; Techniques</td>
<td>2</td>
</tr>
<tr>
<td>Total Credits</td>
<td>14</td>
<td></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.

In addition to technical core courses, 16 credits of general study courses that are focused on written and verbal communications, human behavior and ethics are part of the degree core requirements and another 16 credits of general education courses are required as part of the comprehensive AAS Degree requirements. Math and Writing courses are also required to meet college competency requirements and fire officer standards. The AAS Degree in Fire Protection Technology will help individuals prepare to become leaders in the fire service and in the communities that they live and work in. Completion of the AAS Degree also prepares the individual to continue their education at the Bachelor Degree level in Fire Service Administration.

The Fire Protection Technology Certificate is a 44-credit pre-employment certificate designed to meet specific entry-level fire service certification requirements including Fire Fighter 2, Hazardous Materials First Responder Awareness and Operations, Wildland Interface Fire Fighter 2 and Emergency Medical Technician. Upon completion of the Fire Academy and EMT classes, students will be eligible to begin cooperative education classes to gain work experience in the field with a fire department. A minimum of six months of work experience as an intern is required to earn the Fire Protection Certificate. Students should plan to be involved with a fire agency for a minimum of six months to earn the certificate but expect to commit to spending a year or more to maintain fire fighter skills and proficiency while pursing a career position.

Degrees and Certificates Offered

Associate of Applied Science Degree
Fire Protection Technology
Less than One-Year: Career Pathway Certificate

Fire Protection Technology

Admission Prerequisites

Academic Prerequisites

- Students interested in the Fire Protection Pre-Employment Certificate program must take FP 101 as part of the prerequisites to enter the Fire Academy Part I and Part II 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, Fire Academy Part I and FP 112, Fire Academy Part II.
- Students should have completed MTH 20, RD 80 and WR 90 or tested into higher level course work before starting the certificate program.
- Students entering the Fire Protection Technology AAS degree program need to have completed the Fire Protection Pre-Employment Certificate at PCC or have equivalent training and certification through a local fire agency and have met course prerequisite requirements of WR 115 and MTH 60. The AAS in Fire Protection Technology is designed to meet specific fire service certification requirements including Emergency Service Instructor I, Fire Officer I, and Fire Officer II.

Other Prerequisites

- Students intending to enroll in the Fire Academy Part I and Part II will be required to have a physician’s release to use equipment designed to protect the respiratory system from the products of combustion and hazardous chemicals. It is recommended that students acquire a physician’s 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 or unethical behavior, or physical inability to perform standard job duties) into another area of study.
- Students with 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.

Program Requirements

Academic Requirements

- None

Other Requirements

- Criminal history background checks will be mandatory. Satisfactory background checks are needed to qualify for cooperative education and state certification as a fire fighter and EMT Basic. The cost for the criminal history background check is the responsibility of the student.
- Fire Protection Technology students should be aware that the following questions are asked on the National Registry EMT and/or the Oregon EMT Application:
  a. 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.
  b. Do you or have you used in the last 10 years, any drug or chemical substance for other than legitimate medical purposes that impairs or has impaired your ability to perform the duties of an EMT?
  c. Have you been counseled about, diagnosed with, or treated for, a dependency on alcohol or drugs within the last 10 years?
  d. Have you ever been arrested, charged with, or convicted of any misdemeanor or felony? (Minor traffic violations need not be reported.)
  e. 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.)
  f. Have you been named in a lawsuit alleging medical malpractice or misconduct related to providing medical care?
  g. Have you ever been disciplined, denied or revoked by the National Registry of EMTs or any health care certifying/licensing agency?
  h. Have you ever surrendered or resigned a health care license or certificate?
  i. Have you lived, worked or attended school outside of Oregon for 60 or more consecutive days in the last 5 years?

Fire Protection Technology AAS Degree

Minimum 100 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. 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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Fire Protection Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>4</td>
</tr>
<tr>
<td>COMM 214</td>
<td>Interpersonal Communication: Process and Theory</td>
<td>4</td>
</tr>
<tr>
<td>FP 121</td>
<td>Fire Behavior and Combustion</td>
<td>3</td>
</tr>
<tr>
<td>FP 122</td>
<td>Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FP 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>
<td>3</td>
</tr>
<tr>
<td>FP 240</td>
<td>Emergency Services Instructor I</td>
<td>3</td>
</tr>
<tr>
<td>FP 273</td>
<td>Fire Service Human Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>
FP 274  Introduction to Fire and Emergency Administration  3
FP 275  Community and Government Relations  3
FP 291  Fire Codes and Related Ordinances  3
FP 295  Major Emergency Tactics/Strategy  3
MSD 117  Customer Relations  3
PHL 202  Ethics  4
PSY 101  Psychology and Human Relations  4
WR 227  Technical and Professional Writing 1  4

Fire Protection Degree Electives  21
Remaining General Education  8

Total Credits  100

* Could be used as General Education

Fire Protection Degree Electives
EMS 105  EMT Part I  5
EMS 106  EMT Part II  5
FP 101  Principles of Emergency Services  3
FP 111  Fire Academy Part 1  10
FP 112  Fire Academy Part 2  7
FP 123  Hazardous Materials Awareness and Operations  3
FP 133  Wildland Firefighter  3
FP 161  Vehicle Extrication Basics  0.5
FP 200  Fire Apparatus Driver/Operator I  3
FP 201  Introduction to Emergency Service Rescue  4
FP 215  Urban Interface Fire Operations  3
FP 232  Fire Apparatus Driver/Operator II  2
FP 242  Hazardous Materials Chemistry  3
FP 280A  Cooperative Education: Fire Protection  3
FP 280B  Cooperative Education  3
FP 289  Emergency Service Lifetime Fitness and Conditioning  3

Total Credits  44

1 EMS 105 and EMS 106 may be taken before or after the Fire Academy (FP 111 & FP 112).

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 and wellness team working in health and fitness clubs, wellness centers, public and private recreation facilities, hospitals or employee wellness programs. The fitness professional performs a variety of instructional and administrative tasks. Instructional tasks include developing and implementing safe and effective fitness programming, conducting fitness assessments, and instructing clients in appropriate sport, fitness and wellness activities. Administrative duties may include business operations, marketing and health promotion, member retention and sales. 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 client motivation, behavior modification, and self promotion. 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).

Portland Community College Fitness Technology graduates working in this field are known by a variety of titles, including but not limited to: personal trainer, exercise specialist, group exercise leader, fitness instructor, activity director, strength and conditioning trainer, and member services specialist. The Fitness Technology program currently has an articulation agreement in place with both Portland State University and Concordia University which enables students who successfully complete the Fitness Technology AAS degree the opportunity to transfer to PSU or CU with Junior status.

Degrees and Certificates Offered
Associate of Applied Science Degree
Fitness Technology

Less Than One-Year: Career Pathway Certificate
Group Fitness Leader  2
Healthy Older Adult Fitness  7
Personal Trainer  3

Admission Prerequisites
Academic Prerequisites
• High school diploma or equivalent.
Fitness Technology Degree Courses

- WR 115, RD 115 and MTH 20 or equivalent placement test scores.

Other Prerequisites

- Attend a Fitness Technology information session. Check the Fitness Technology website for dates and times of the sessions.
- Application and acceptance to PCC as a credit-seeking student.
- Complete the online Fitness Technology program application. Check the Fitness Technology website for application deadlines and access to the application. All prerequisites must be completed prior to submitting the Fitness Technology program application.

Program Requirements

Academic Requirements

- All courses for the Fitness Technology AAS and Career Pathway Certificates must be completed with a grade of "C" or "P" or better.
- A maximum of 9 of Pass/No Pass credits are allowed in the Fitness Technology Career Pathway Certificates.
- First year winter term courses for the AAS degree and the Personal Trainer Career Pathway Certificate require MTH 65 or higher and WR 121 with a "C" or "P" or better as prerequisites.

Other Requirements

- Transcripts with previous coursework must be evaluated by student records.
- Schedule and meet with the Fitness Technology Faculty Department Chair and the Academic Advisor prior to first term enrollment.
- Meet with the Fitness Technology Advisor once per term.
- Applicants with disabilities are encouraged to contact Disability Services 971-722-4341.

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. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Fitness Technology Degree Electives

Any approved PCC or transfer course.

Less Than One-Year: Career Pathway Certificate

Group Fitness Leader (p. 112)
Healthy Older Adult Fitness (p. 113)
Personal Trainer (p. 113)

Group Fitness Leader Career Pathway Certificate

Minimum of 30 credits. Students must meet all certificate requirements. The Group Fitness Leader Certificate is a Career Pathway. All courses are contained in the Fitness Technology AAS Degree.

Group Fitness Leader Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG 280A</td>
<td>CE: Career Development</td>
<td>2</td>
</tr>
<tr>
<td>FT 101</td>
<td>Fitness Technology Seminar</td>
<td>3</td>
</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>FT 103</td>
<td>Nutrition for Fitness Instructors</td>
<td>3</td>
</tr>
<tr>
<td>FT 104</td>
<td>Fitness Assessment</td>
<td>3</td>
</tr>
<tr>
<td>FT 105</td>
<td>Exercise Prescription</td>
<td>3</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>FT 107</td>
<td>Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>FT 180</td>
<td>Fitness Technology Internship Preparation</td>
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<tr>
<td>FT 201</td>
<td>Advanced Fitness Assessment and Prescription</td>
<td>3</td>
</tr>
<tr>
<td>FT 202</td>
<td>Fitness and Aging</td>
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</tr>
<tr>
<td>FT 203</td>
<td>Fitness Promotion</td>
<td>3</td>
</tr>
<tr>
<td>FT 204</td>
<td>Advanced Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>FT 280</td>
<td>Fitness Technology Internship</td>
<td>8</td>
</tr>
<tr>
<td>HE 295</td>
<td>Health and Fitness for Life</td>
<td>2</td>
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<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</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181B</td>
<td>Intermediate Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181C</td>
<td>Advanced Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training</td>
<td>2</td>
</tr>
<tr>
<td>PE 282A</td>
<td>Professional Activities: Group Fitness</td>
<td>2</td>
</tr>
<tr>
<td>PE 283</td>
<td>Professional Activities: Mind-Body Disciplines</td>
<td>2</td>
</tr>
<tr>
<td>PE 287</td>
<td>Professional Activities: Aquatics</td>
<td>2</td>
</tr>
<tr>
<td>PE 288</td>
<td>Professional Activities: Team Sports Training</td>
<td>2</td>
</tr>
<tr>
<td>PE 295</td>
<td>Health and Fitness for Life Lab</td>
<td>1</td>
</tr>
</tbody>
</table>

Choosing 3 of the following:

- PE 282A or PE 282B, PE 283, PE 287, PE 288.

Recommend BI 112 and/or MTH 111

Total Credits: 90

1. 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.
2. General Education: 16 credits

Fitness Technology Internship Preparation

Structure & Function of the Human Body

Advanced Fitness Assessment and Prescription

Intermediate Weight Training

Advanced Weight Training

Professional Activities: Aquatics

Professional Activities: Team Sports Training

Professional Activities: Health and Fitness for Life

Professional Activities: Career Development

Professional Activities: Group Fitness

Professional Activities: Mind-Body Disciplines

Professional Activities: Personal Trainer

Professional Activities: Heart and Body Disciplines

Professional Activities: Aquatics

Professional Activities: Team Sports Training

Professional Activities: Weight Training

Professional Activities: Group Fitness

Professional Activities: Mind-Body Disciplines

Professional Activities: Team Sports Training

Professional Activities: Health and Fitness for Life Lab

Professional Activities: Career Development

Professional Activities: Group Fitness

Professional Activities: Mind-Body Disciplines

Professional Activities: Aquatics

Professional Activities: Team Sports Training

Professional Activities: Weight Training
Group Fitness Leader Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE 142A</td>
<td>Zumba Fitness I</td>
<td>1</td>
</tr>
<tr>
<td>PE 142B</td>
<td>Zumba Fitness II</td>
<td>1</td>
</tr>
<tr>
<td>PE 142C</td>
<td>Zumba Fitness Gold</td>
<td>1</td>
</tr>
<tr>
<td>PE 143A</td>
<td>Aquatic Exercise I</td>
<td>1</td>
</tr>
<tr>
<td>PE 143B</td>
<td>Aquatic Exercise II</td>
<td>1</td>
</tr>
<tr>
<td>PE 143C</td>
<td>Aquatic Exercise III</td>
<td>1</td>
</tr>
<tr>
<td>PE 162G</td>
<td>Cardio Conditioning</td>
<td>1</td>
</tr>
<tr>
<td>PE 181M</td>
<td>Boot Camp II</td>
<td>1</td>
</tr>
<tr>
<td>PE 182A</td>
<td>Beginning Group Fitness</td>
<td>1</td>
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<tr>
<td>PE 182B</td>
<td>Intermediate Group Fitness</td>
<td>1</td>
</tr>
<tr>
<td>PE 182F</td>
<td>Boot Camp I</td>
<td>1</td>
</tr>
<tr>
<td>PE 182X</td>
<td>Nia Technique</td>
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</tr>
<tr>
<td>PE 182Y</td>
<td>Indoor Cycling</td>
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</tbody>
</table>

Total Credits: 30

Healthy Older Adult Fitness Career Pathway Certificate

Minimum of 26 credits. Students must meet all certificate requirements. The Healthy Older Adult Fitness Certificate is a Career Pathway. All courses are contained in the Fitness Technology AAS Degree.

Healthy Older Adult Fitness Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
<td>4</td>
</tr>
<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>1</td>
</tr>
<tr>
<td>FT 280</td>
<td>Fitness Technology Internship</td>
<td>1</td>
</tr>
<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
<td>1</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</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181B</td>
<td>Intermediate Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181C</td>
<td>Advanced Weight Training</td>
<td>1</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: Special Populations</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>
<td>4</td>
</tr>
<tr>
<td>or SOC 231</td>
<td>Sociology of Health &amp; Aging</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits: 26

Personal Trainer Career Pathway Certificate

Minimum 40 credits. Students must meet all certificate requirements. The Personal Trainer Certificate is a Career Pathway. All courses are contained in the Fitness Technology AAS Degree.

Personal Trainer Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT 101</td>
<td>Fitness Technology Seminar</td>
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</tr>
<tr>
<td>FT 102</td>
<td>Injury Prevention &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>FT 103</td>
<td>Nutrition for Fitness Instructors</td>
<td>3</td>
</tr>
<tr>
<td>FT 104</td>
<td>Fitness Assessment</td>
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<tr>
<td>FT 105</td>
<td>Exercise Prescription</td>
<td>3</td>
</tr>
<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
<td>3</td>
</tr>
<tr>
<td>FT 107</td>
<td>Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>FT 180</td>
<td>Fitness Technology Internship Preparation</td>
<td>1</td>
</tr>
<tr>
<td>FT 280</td>
<td>Fitness Technology Internship</td>
<td>1</td>
</tr>
<tr>
<td>HE 295</td>
<td>Health and Fitness for Life</td>
<td>2</td>
</tr>
<tr>
<td>&amp; PE 295</td>
<td>Health and Fitness for Life Lab</td>
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<tr>
<td>PE 181A</td>
<td>Beginning Weight Training</td>
<td>1</td>
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<tr>
<td>or PE 181B</td>
<td>Intermediate Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>or PE 181C</td>
<td>Advanced Weight Training</td>
<td>1</td>
</tr>
<tr>
<td>PE 281</td>
<td>Professional Activities: Weight Training</td>
<td>2</td>
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<tr>
<td>PE 282A</td>
<td>Professional Activities: Group Fitness</td>
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<tr>
<td>PE 282B</td>
<td>Professional Activities: Special Populations</td>
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<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>
</tbody>
</table>

Total Credits: 40

1 Professional Activities certificate requirement: PE 281 and two other Professional Activities courses chosen from these options: PE 282A, PE 282B, PE 283, PE 287, PE 288.

Food & Nutrition

Rock Creek Campus
Building 5, Room 245
971-722-7327

Southeast Campus
Student Commons (SCOM), Room 214
971-722-6146

Sylvania Campus
Health Technology Building (HT), Room 318
971-722-4217

www.pcc.edu/programs/food-nutrition/

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.

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 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.

Geography
Sylvania Campus
Social Science Building (SS), Room 201
971-722-4289

Rock Creek Campus
Building 5, Room 245
971-722-7327

Cascade Campus
Cascade Hall (CH), Room 208
971-722-5251

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

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 global.

Geographers work with quantitative and qualitative data and use a variety of tools, such as Geographic Information Systems (GIS) and Global Positioning Systems (GPS) to collect, display, and analyze spatial data. GIS and other spatial analysis tools 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, remote sensing, 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, interactive maps, modeling, and cartography.

Degrees and Certificates Offered
Less Than One-Year Certificate
Geographic Information Systems (GIS)

Admission Prerequisites
Academic Prerequisites
• WR 115 or equivalent placement scores
• RD 115 or equivalent placement scores
• MTH 60 or equivalent placement scores
Other Prerequisites
- None

Program Requirements
Academic Requirements
- None

Other Requirements
- None

Geographic Information Systems Less Than One-Year Certificate
Minimum 41 credits. Students must meet all certificate requirements.

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

First Term
- GEO 264: Maps & Geospatial Concepts (4 credits)
- GEO 265: Introduction to GIS (Geographical Information Systems) (4 credits)
- GIS Elective (4 credits)
- Geography Elective (4 credits)

Second Term
- GEO 266: GIS Analysis (4 credits)
- GIS Elective (4 credits)
- Geography Elective (4 credits)
- Technical Elective (4 credits)

Third Term
- GEO 267: Application Topics in Geographic Information Systems (4 credits)
- GEO 270: Creating a Map Portfolio (1 credit)
- GIS Elective (4 credits)

Total Credits: 41

1 Electives can be distributed throughout the year in a variety of ways, not just the way it is listed above. 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.

Geographic Information Systems Certificate GIS Electives
- GEO 221: Field Geography: The Local Landscape (4 credits)
- GEO 223: Field Geography: GPS & GIS (4 credits)
- GEO 240: Cartographic Principles and Applications (4 credits)
- GEO 242: GIS Programming (4 credits)
- GEO 244: Interactive Map Design (4 credits)
- GEO 246: Remote Sensing and Image Analysis (4 credits)
- GEO 280A: GE: Geography (4 credits)
- GEO 280B: GE: Geography - Seminar (1 credit)

Geographic Information Systems Certificate Geography Electives
- GEO 105: Introduction to Human Geography (4 credits)
- GEO 106: World Regional Geography (4 credits)
- GEO 107: Geography of Global Issues (4 credits)
- GEO 202: Geography of Europe (4 credits)
- GEO 204: Geography of Middle East (4 credits)
- GEO 206: Geography of Oregon (4 credits)
- GEO 209: Physical Geography: Weather and Climate (4 credits)
- GEO 210: The Natural Environment (4 credits)
- GEO 215: Geography of Latin America (4 credits)
- GEO 230: Geography of Race & Ethnic Conflicts (4 credits)
- GEO 250: Geography of Africa (4 credits)
- GEO 298: Independent Study: Geography (4 credits)

Geographic Information Systems Certificate Technical Electives
- CAS 106: Introduction to HTML (1 credit)
- CAS 140: Beginning Access (3 credits)
- CAS 170: Beginning Excel (3 credits)
- CAS 171: Intermediate Excel (3 credits)
- CAS 206: Principles of HTML and CSS (4 credits)
- CAS 213: JavaScript and JQuery for Designers (4 credits)
- CAS 215: Intermediate CSS and Preprocessors (4 credits)
- CAS 233: Beginning Illustrator (3 credits)
- CIS 125D: Database Application Development I (4 credits)
- CIS 133W: JavaScript for Web Developers (4 credits)
- CIS 275: Data Modeling and SQL Introduction (4 credits)
- MTH 243: Statistics I (5 credits)

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 148, G 184 courses introduce students to specific topics within geology, 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.

Students may earn one or more gerontology career pathway certificates alone or in conjunction with the gerontology AAS. 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 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.

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

Admission Prerequisites

Academic Prerequisites

• Candidates should be ready to enter WR 121 and MTH 20 for any certificate and MTH 58/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.

Other Prerequisites

• None

Program Requirements

Academic Requirements

• 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 provides a unique opportunity for students to work directly with older adults in their career interest area.
- Degree and certificate candidates who have related work experience with aging adults may petition to waive one credit for every 70 hours worked toward the required internship credits, typically up to a total of three credits.

Other Requirements

- None

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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Gerontology Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AD 105</td>
<td>Aging &amp; Addiction</td>
<td>3</td>
</tr>
<tr>
<td>AD 102</td>
<td>Drug Use and Addiction</td>
<td>3</td>
</tr>
<tr>
<td>AD 105</td>
<td>Aging &amp; Addiction</td>
<td>3</td>
</tr>
<tr>
<td>AD 154</td>
<td>Client Record Management and Addiction</td>
<td>3</td>
</tr>
<tr>
<td>AD 156</td>
<td>Ethical and Professional Issues</td>
<td>3</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>COMM 111</td>
<td>Public Speaking</td>
<td>4</td>
</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>
<td>3</td>
</tr>
<tr>
<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
<td>4</td>
</tr>
<tr>
<td>FT 202</td>
<td>Fitness and Aging</td>
<td>3</td>
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<tr>
<td>GRN 131</td>
<td>Hospice Basics</td>
<td>1</td>
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<tr>
<td>GRN 155</td>
<td>Home Care Activity Training</td>
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<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
<td>2</td>
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<tr>
<td>GRN 166</td>
<td>Nature Activities for Senior Living</td>
<td>1</td>
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<tr>
<td>GRN 170</td>
<td>Resident Assistant I Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 171</td>
<td>Resident Assistant II Training</td>
<td>1</td>
</tr>
<tr>
<td>GRN 172</td>
<td>Adult Care Home Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 175</td>
<td>The Aging Mind</td>
<td>2</td>
</tr>
<tr>
<td>GRN 176</td>
<td>Cognitive Activity Design</td>
<td>2</td>
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<tr>
<td>GRN 177</td>
<td>Arts &amp; Cognitive Activity Design</td>
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<tr>
<td>GRN 233</td>
<td>Supporting End of Life</td>
<td>4</td>
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<tr>
<td>GRN 235</td>
<td>Introduction to Dementia Care</td>
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<tr>
<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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<tr>
<td>GRN 239</td>
<td>End of Life Practices</td>
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<tr>
<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 247</td>
<td>Applied Legal and Policy Issues in Aging</td>
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<td>GRN 265</td>
<td>Activity Professional Certification Training 1</td>
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</tr>
<tr>
<td>GRN 266</td>
<td>Activity Professional Certification Training 2</td>
<td>2</td>
</tr>
<tr>
<td>GRN 267</td>
<td>Introduction to Professional Therapeutic Horticulture</td>
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<tr>
<td>GRN 268</td>
<td>Techniques &amp; Adaptive Strategies in Therapeutic Horticulture</td>
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<tr>
<td>GRN 269</td>
<td>Therapeutic Horticulture Skills I</td>
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<tr>
<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>
<td>2</td>
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<td>GRN 272</td>
<td>Therapeutic Garden Design, Maintenance &amp; Programming</td>
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<tr>
<td>HE 112</td>
<td>Standard First Aid and Emergency Care</td>
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<tr>
<td>HE 113</td>
<td>First Aid&amp;CPR/AED Professional Rescuers/HealthCare Providers</td>
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<td>HE 212</td>
<td>Women's Health</td>
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<tr>
<td>HE 213</td>
<td>Men's Health</td>
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<tr>
<td>HE 242</td>
<td>Stress and Human Health</td>
<td>4</td>
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<tr>
<td>HE 250</td>
<td>Personal Health</td>
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<td>HE 251</td>
<td>Community and Public Health Issues</td>
<td>4</td>
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<td>HE 252</td>
<td>First Aid - Basics and Beyond</td>
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<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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<tr>
<td>HE 264</td>
<td>Health, Food Systems, and the Environment</td>
<td>3</td>
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</tbody>
</table>

Other Requirements

- None

Gerontology Program Electives* 

AD 101 | Alcohol Use and Addiction | 3 |

* Could be used as General Education

1 Students may choose to take GRN 280A for 10 credits or FT 280 for 8 credits and GRN 280A for 2 credits

2 Degree 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.
HE 278  Human Health and the Environment
HE 295  Health and Fitness for Life
&P E 295  and Health and Fitness for Life Lab
MP 111  Medical Terminology
PHL 207  Ethics and Aging
PSY 101*  Psychology and Human Relations
PSY 201A*  Introduction to Psychology - Part 1
PSY 202A*  Introduction to Psychology - Part 2
PSY 213  Introduction to Behavioral Neuroscience
PSY 214*  Introduction to Personality
PSY 215*  Human Development
PSY 216  Social Psychology
PSY 222*  Family & Intimate Relationships
PSY 231*  Human Sexuality
PSY 232*  Human Sexuality
PSY 239  Introduction to Abnormal Psychology
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
SOC 219  Religion & Culture: Social Dimensions
SOC 228  Introduction to Environmental Sociology

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

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

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

Activity Assistant Career Pathway Certificate
Minimum 26 credits. Students must meet all certificate requirements. The Gerontology Activity Assistant Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

Activity Assistant Certificate Courses
GRN 165  Activity Director Training
GRN 176  Cognitive Activity Design
GRN 181  Exploring the Field of Aging
GRN 265  Activity Professional Certification Training 1
GRN 280A  CE: Gerontology Internship
GRN 280B  Gerontology Internship Seminar
GRN 282  Gerontology Professional Seminar
HE 250  Personal Health
GRN 280A  CE: Gerontology Internship
or FT 280  Fitness Technology Internship
SOC 223  Social Gerontology/Sociology of Aging
WR 121  English Composition (Or any writing course with WR121 as a prerequisite)

Total Credits 26

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 Consultant Career Pathway Certificate
Minimum 23 credits. Students must meet all certificate requirements. The Gerontology Activity Consultant Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

Activity Consultant Certificate Courses
GRN 165  Activity Director Training
GRN 176  Cognitive Activity Design
GRN 177  Arts & Cognitive Activity Design
GRN 265  Activity Professional Certification Training 1
GRN 266  Activity Professional Certification Training 2
GRN 280A  CE: Gerontology Internship
GRN 282  Gerontology Professional Seminar
SOC 223  Social Gerontology/Sociology of Aging
SOC 230  Introduction to Gerontology

Total Credits 23

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.

Less than One-Year: Career Pathway Certificate
Activity Assistant (p. 118)
Activity Consultant (p. 118)
Activity Director (p. 119)
Advanced Behavioral and Cognitive Care (p. 119)
End of Life Care and Support (p. 119)
Gerontology (p. 119)
Horticultural Therapy (p. 121)
Activity Director Career Pathway Certificate

Minimum 38 credits. Students must meet all certificate requirements. The Gerontology Activity Director Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

Activity Director Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 176</td>
<td>Cognitive Activity Design</td>
<td>2</td>
</tr>
<tr>
<td>GRN 177</td>
<td>Arts &amp; Cognitive Activity Design</td>
<td>1</td>
</tr>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
</tr>
</tbody>
</table>
| GRN 265 | Activity Professional Certification Training 1 | 2
| GRN 266 | Activity Professional Certification Training 2 | 2
| GRN 280A | CE: Gerontology Internship            | 5       |
|         | or FT 280 Fitness Technology Internship   |         |
| GRN 280B | Gerontology Internship Seminar           | 1       |
| GRN 282 | Gerontology Professional Seminar         | 2       |
| HE 250  | Personal Health                          | 3       |
|         | or HE 295 Health and Fitness for Life     |         |
|         | & PE 295 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 | 2
| WR 121  | English Composition (Or any writing course with WR121 as a prerequisite) | 4       |

Total Credits 38

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 39 credits. Students must meet all certificate requirements. The Gerontology Advanced Behavioral and Cognitive Care Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

Advanced Behavioral and Cognitive Care Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>AD 105</td>
<td>Aging &amp; Addiction</td>
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<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
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<tr>
<td>GRN 175</td>
<td>The Aging Mind</td>
<td>2</td>
</tr>
<tr>
<td>GRN 176</td>
<td>Cognitive Activity Design</td>
<td>2</td>
</tr>
<tr>
<td>GRN 177</td>
<td>Arts &amp; Cognitive Activity Design</td>
<td>1</td>
</tr>
<tr>
<td>GRN 235</td>
<td>Introduction to Dementia Care</td>
<td>3</td>
</tr>
<tr>
<td>GRN 236</td>
<td>Dementia Care Practice</td>
<td>1</td>
</tr>
<tr>
<td>GRN 240</td>
<td>Care and Service Coordination</td>
<td>3</td>
</tr>
<tr>
<td>GRN 245</td>
<td>Introduction to Guardianship in Oregon</td>
<td>3</td>
</tr>
<tr>
<td>GRN 247</td>
<td>Applied Legal and Policy Issues in Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship</td>
<td>1</td>
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<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
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</table>

Total Credits 39

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. Students must meet all certificate requirements. The Gerontology End of Life Care and Support Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree.

End of Life Care and Support Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GRN 131</td>
<td>Hospice Basics</td>
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<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
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<tr>
<td>GRN 233</td>
<td>Supporting End of Life</td>
<td>4</td>
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<tr>
<td>GRN 237</td>
<td>End of Life Therapies</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>or GRN 239 End of Life Practices</td>
<td></td>
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<tr>
<td>GRN 240</td>
<td>Care and Service Coordination</td>
<td>3</td>
</tr>
<tr>
<td>GRN 245</td>
<td>Introduction to Guardianship in Oregon</td>
<td>1</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship</td>
<td>4</td>
</tr>
<tr>
<td>GRN 247</td>
<td>Applied Legal and Policy Issues in Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
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<tr>
<td>PHL 207</td>
<td>Ethics and Aging</td>
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<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
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<tr>
<td>SOC 231</td>
<td>Sociology of Health &amp; Aging</td>
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<tr>
<td>SOC 232</td>
<td>Death and Dying: Culture and Issues</td>
<td>4</td>
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</tbody>
</table>
|         | or SOC 234 Death: Crosscultural Perspectives | 2

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.

Gerontology Certificate Career Pathway Certificate

Minimum 44 credits. Students must meet all certificate requirements. The Gerontology Certificate is a Career Pathway. All courses within the certificate are contained in the Gerontology AAS Degree.

Gerontology Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GRN 181</td>
<td>Exploring the Field of Aging</td>
<td>2</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship</td>
<td>4</td>
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<tr>
<td></td>
<td>or FT 280 Fitness Technology Internship</td>
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<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
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</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
<td>2</td>
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</tbody>
</table>

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.
### Gerontology Program Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PSY 236</td>
<td>Psychology of Adult Development and Aging</td>
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<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
<td>4</td>
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<tr>
<td>SOC 230</td>
<td>Introduction to Gerontology</td>
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<tr>
<td>SOC 231</td>
<td>Sociology of Health &amp; Aging</td>
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<tr>
<td>SOC 232</td>
<td>Death and Dying: Culture and Issues</td>
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<tr>
<td>or SOC 234</td>
<td>Death: Crosscultural Perspectives</td>
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<td>WR 121</td>
<td>English Composition</td>
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<td>Gerontology CAS Electives</td>
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<td>Gerontology Program Electives</td>
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</table>

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.

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### Gerontology Program Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>AD 102</td>
<td>Drug Use and Addiction</td>
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<tr>
<td>AD 105</td>
<td>Aging &amp; Addiction</td>
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<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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<td>BA 101</td>
<td>Introduction to Business</td>
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<td>COMM 111</td>
<td>Public Speaking</td>
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<tr>
<td>FT 102</td>
<td>Injury Prevention &amp; Management</td>
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<tr>
<td>FT 106</td>
<td>Analysis of Movement</td>
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<td>FT 131</td>
<td>Structure &amp; Function of the Human Body</td>
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<td>Home Care Activity Training</td>
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<td>Activity Director Training</td>
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<td>GRN 166</td>
<td>Nature Activities for Senior Living</td>
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<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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<td>GRN 172</td>
<td>Adult Care Home Training</td>
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<td>GRN 175</td>
<td>The Aging Mind</td>
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<td>Cognitive Activity Design</td>
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<td>Arts &amp; Cognitive Activity Design</td>
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<td>Supporting End of Life</td>
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<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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<td>End of Life Practices</td>
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<td>Care and Service Coordination</td>
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<td>Introduction to Guardianship in Oregon</td>
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<td>GRN 247</td>
<td>Applied Legal and Policy Issues in Aging</td>
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<td>GRN 265</td>
<td>Activity Professional Certification Training 1</td>
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<td>GRN 266</td>
<td>Activity Professional Certification Training 2</td>
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<td>GRN 267</td>
<td>Introduction to Professional Therapeutic Horticulture</td>
<td>3</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>Therapeutic Horticulture Programming for Adults &amp; Children</td>
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<td>GRN 272</td>
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<td>Interior Plants</td>
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<td>HE 212</td>
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<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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<td>HE 251</td>
<td>First Aid - Basics and Beyond</td>
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<tr>
<td>HE 252</td>
<td>Weight Management and Personal Health</td>
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<td>HE 254</td>
<td>Film and Public Health</td>
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<td>Health, Food Systems, and the Environment</td>
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<td>Human Health and the Environment</td>
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<td>Health and Fitness for Life</td>
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<td>Medical Terminology</td>
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<td>PHL 207</td>
<td>Ethics and Aging</td>
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<td>PSY 101</td>
<td>Psychology and Human Relations</td>
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<td>Introduction to Psychology - Part 1</td>
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<td>PSY 202A</td>
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<td>PSY 213</td>
<td>Introduction to Behavioral Neuroscience</td>
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<td>PSY 214</td>
<td>Introduction to Personality</td>
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<td>PSY 215</td>
<td>Human Development</td>
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<td>SOC 228</td>
<td>Introduction to Environmental Sociology</td>
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* In order to meet the credit minimum for the degree requirements, some courses may count toward electives or General Education, but not both.

### Gerontology CAS Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111E</td>
<td>Beginning Website Creation: Expression Web</td>
<td>3</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CAS 140</td>
<td>Beginning Access</td>
<td>3</td>
</tr>
<tr>
<td>CAS 170</td>
<td>Beginning Excel</td>
<td>3</td>
</tr>
<tr>
<td>CAS 216</td>
<td>Beginning Word</td>
<td>3</td>
</tr>
<tr>
<td>GRN 269</td>
<td>Therapeutic Horticulture Skills I</td>
<td>2</td>
</tr>
<tr>
<td>GRN 270</td>
<td>Therapeutic Horticulture Programming for Adults &amp; Children</td>
<td>2</td>
</tr>
<tr>
<td>GRN 271</td>
<td>Therapeutic Horticulture Skills II</td>
<td>2</td>
</tr>
<tr>
<td>GRN 272</td>
<td>Therapeutic Garden Design, Maintenance &amp; Programming</td>
<td>3</td>
</tr>
<tr>
<td>GRN 273</td>
<td>Interior Plants</td>
<td>3</td>
</tr>
<tr>
<td>CAS 269</td>
<td>Standard First Aid and Emergency Care</td>
<td>1</td>
</tr>
<tr>
<td>GRN 270</td>
<td>First Aid &amp; CPR/AED Professional Rescuers/HealthCare Providers</td>
<td>1</td>
</tr>
<tr>
<td>GRN 271</td>
<td>Women’s Health</td>
<td>1</td>
</tr>
<tr>
<td>GRN 272</td>
<td>Men’s Health</td>
<td>1</td>
</tr>
<tr>
<td>GRN 273</td>
<td>Stress and Human Health</td>
<td>1</td>
</tr>
<tr>
<td>GRN 274</td>
<td>Personal Health</td>
<td>1</td>
</tr>
<tr>
<td>GRN 275</td>
<td>Community and Public Health Issues</td>
<td>1</td>
</tr>
<tr>
<td>GRN 276</td>
<td>First Aid - Basics and Beyond</td>
<td>1</td>
</tr>
<tr>
<td>GRN 277</td>
<td>Weight Management and Personal Health</td>
<td>1</td>
</tr>
<tr>
<td>GRN 278</td>
<td>Film and Public Health</td>
<td>1</td>
</tr>
<tr>
<td>GRN 279</td>
<td>Health, Food Systems, and the Environment</td>
<td>1</td>
</tr>
<tr>
<td>GRN 280</td>
<td>Human Health and the Environment</td>
<td>1</td>
</tr>
<tr>
<td>GRN 281</td>
<td>Health and Fitness for Life</td>
<td>1</td>
</tr>
<tr>
<td>GRN 282</td>
<td>and Health and Fitness for Life Lab</td>
<td>1</td>
</tr>
<tr>
<td>GRN 283</td>
<td>Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>GRN 284</td>
<td>Ethics and Aging</td>
<td>1</td>
</tr>
<tr>
<td>GRN 285</td>
<td>Psychology and Human Relations</td>
<td>1</td>
</tr>
<tr>
<td>GRN 286</td>
<td>Introduction to Psychology - Part 1</td>
<td>1</td>
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<tr>
<td>GRN 287</td>
<td>Introduction to Psychology - Part 2</td>
<td>1</td>
</tr>
<tr>
<td>GRN 288</td>
<td>Introduction to Behavioral Neuroscience</td>
<td>1</td>
</tr>
<tr>
<td>GRN 289</td>
<td>Introduction to Personality</td>
<td>1</td>
</tr>
<tr>
<td>GRN 290</td>
<td>Human Development</td>
<td>1</td>
</tr>
<tr>
<td>GRN 291</td>
<td>Social Psychology</td>
<td>1</td>
</tr>
<tr>
<td>GRN 292</td>
<td>Family &amp; Intimate Relationships</td>
<td>1</td>
</tr>
<tr>
<td>GRN 293</td>
<td>Human Sexuality</td>
<td>1</td>
</tr>
<tr>
<td>GRN 294</td>
<td>Human Sexuality</td>
<td>1</td>
</tr>
<tr>
<td>GRN 295</td>
<td>Introduction to Abnormal Psychology</td>
<td>1</td>
</tr>
<tr>
<td>GRN 296</td>
<td>Sociology in Everyday Life</td>
<td>1</td>
</tr>
<tr>
<td>GRN 297</td>
<td>Social Change in Societies</td>
<td>1</td>
</tr>
<tr>
<td>GRN 298</td>
<td>Social Problems</td>
<td>1</td>
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<tr>
<td>GRN 299</td>
<td>Diversity in the United States</td>
<td>1</td>
</tr>
<tr>
<td>GRN 300</td>
<td>Sociology of Gender</td>
<td>1</td>
</tr>
<tr>
<td>GRN 301</td>
<td>Religion &amp; Culture: Social Dimensions</td>
<td>1</td>
</tr>
<tr>
<td>GRN 302</td>
<td>Introduction to Environmental Sociology</td>
<td>1</td>
</tr>
</tbody>
</table>
This requirement can be met through proof of comparable, work-based computer skills training.

**Horticultural Therapy Career Pathway Certificate**

Minimum 38 credits. Students must meet all certificate requirements. The Horticultural Therapy Certificate is a Career Pathway. All courses are contained in the Gerontology AAS Degree

**Horticultural Therapy Certificate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRN 165</td>
<td>Activity Director Training</td>
<td>2</td>
</tr>
<tr>
<td>GRN 166</td>
<td>Nature Activities for Senior Living</td>
<td>1</td>
</tr>
<tr>
<td>GRN 235</td>
<td>Introduction to Dementia Care</td>
<td>3</td>
</tr>
<tr>
<td>GRN 236</td>
<td>Dementia Care Practice</td>
<td>1</td>
</tr>
<tr>
<td>GRN 267</td>
<td>Introduction to Professional Therapeutic Horticulture</td>
<td>2</td>
</tr>
<tr>
<td>GRN 268</td>
<td>Techniques &amp; Adaptive Strategies in Therapeutic Horticulture</td>
<td>2</td>
</tr>
<tr>
<td>GRN 269</td>
<td>Therapeutic Horticulture Skills I</td>
<td>2</td>
</tr>
<tr>
<td>GRN 270</td>
<td>Therapeutic Horticulture Programming for Adults &amp; Children</td>
<td>2</td>
</tr>
<tr>
<td>GRN 271</td>
<td>Therapeutic Horticulture Skills II</td>
<td>2</td>
</tr>
<tr>
<td>GRN 272</td>
<td>Therapeutic Garden Design, Maintenance &amp; Programming</td>
<td>3</td>
</tr>
<tr>
<td>GRN 273</td>
<td>Interior Plants</td>
<td>3</td>
</tr>
<tr>
<td>GRN 280A</td>
<td>CE: Gerontology Internship</td>
<td>4</td>
</tr>
<tr>
<td>GRN 280B</td>
<td>Gerontology Internship Seminar</td>
<td>1</td>
</tr>
<tr>
<td>GRN 282</td>
<td>Gerontology Professional Seminar</td>
<td>2</td>
</tr>
<tr>
<td>PSY 236</td>
<td>Psychology of Adult Development and Aging</td>
<td>4</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Gerontology/Sociology of Aging</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total Credits:** 38

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**

**Admission Prerequisites**

**Academic Prerequisites**

- The first three graphic design courses (GD 101, GD 114 and GD 120) are open for all PCC students who meet the registration requirements and course prerequisites to enroll. Enrolling in subsequent GD courses is limited to Graphic Design majors.
- In order to declare a major of Graphic Design, students must complete the GD Program application form and earn a "B" grade or higher in GD 101, GD 114 and GD 120. Students should declare a General Studies degree before they apply for the Graphic Design program and advance to subsequent GD Program courses.
- This is a limited entry program.

**Other Prerequisites**

- Students interested in enrolling in Graphic Design courses must attend one of the regularly scheduled PCC Graphic Design information sessions. Please go to www.pcc.edu/gd to learn more.

**Program Requirements**

**Academic Requirements**

- To qualify for advancement to second-year courses students must earn a "B" grade or higher in all first-year Graphic Design and Art courses.

**Other Requirements**

- None

**Graphic Design AAS Degree**

Minimum 91 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). 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>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 131A*</td>
<td>Drawing I</td>
</tr>
<tr>
<td>GD 101</td>
<td>Technology and Procedures</td>
</tr>
<tr>
<td>GD 114</td>
<td>Introductory Typography</td>
</tr>
<tr>
<td>GD 120</td>
<td>Graphic Design I</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 111*</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>GD 116</td>
<td>Intermediate Typography</td>
</tr>
</tbody>
</table>
### Health Studies

#### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 122</td>
<td>Graphic Design 2</td>
<td>3</td>
</tr>
<tr>
<td>GD 140</td>
<td>Digital Page Design 1</td>
<td>3</td>
</tr>
<tr>
<td>GD 150</td>
<td>Digital Illustration 1</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GD 124</td>
<td>Graphic Design 3</td>
<td>3</td>
</tr>
<tr>
<td>GD 141</td>
<td>Digital Page Design 2</td>
<td>3</td>
</tr>
<tr>
<td>GD 151</td>
<td>Digital Illustration 2</td>
<td>3</td>
</tr>
<tr>
<td>GD 160</td>
<td>Digital Imaging 1</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Fifth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 214*</td>
<td>History of Graphic Design</td>
<td>4</td>
</tr>
<tr>
<td>GD 221</td>
<td>Graphic Design 4</td>
<td>3</td>
</tr>
<tr>
<td>GD 239</td>
<td>Illustration for Graphic Designers</td>
<td>3</td>
</tr>
<tr>
<td>GD 244</td>
<td>Print Strategies</td>
<td>3</td>
</tr>
<tr>
<td>GD 249</td>
<td>Design Studio</td>
<td>3</td>
</tr>
<tr>
<td>or GD 280A</td>
<td>Cooperative Education: Graphic Design</td>
<td>3</td>
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<tr>
<td>GD 260</td>
<td>Digital Imaging 2</td>
<td>3</td>
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</tbody>
</table>

#### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 239</td>
<td>Advertising</td>
<td>3</td>
</tr>
<tr>
<td>or BA 223</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>GD 292</td>
<td>Portfolio Preparation</td>
<td>3</td>
</tr>
<tr>
<td>GD Art Elective</td>
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</table>

#### General Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<td>Total Credits:</td>
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</tbody>
</table>

* Could be used as General Education

### Graphic Design Degree Art Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 140A</td>
<td>Digital Photography I</td>
<td>3</td>
</tr>
<tr>
<td>ART 204</td>
<td>History of Western Art</td>
<td>4</td>
</tr>
<tr>
<td>ART 204H</td>
<td>History of Western Art: Honors</td>
<td>4</td>
</tr>
<tr>
<td>ART 205</td>
<td>History of Western Art</td>
<td>4</td>
</tr>
<tr>
<td>ART 205H</td>
<td>History of Western Art: Honors</td>
<td>4</td>
</tr>
<tr>
<td>ART 206</td>
<td>History of Western Art</td>
<td>4</td>
</tr>
<tr>
<td>ART 206H</td>
<td>History of Western Art: Honors</td>
<td>4</td>
</tr>
<tr>
<td>ART 219A</td>
<td>The Art of Hand Lettering: Monoline Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ART 271A</td>
<td>Printmaking II</td>
<td>3</td>
</tr>
</tbody>
</table>

Cooperative work experience and internship placements are available. These are highly recommended to prepare student for the graphic design industry.

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### Health Information Management

#### 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 HIM Associate Degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management.
Education (CAHIIM). 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 Pass grade or 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

**Admission Prerequisites**

**Academic Prerequisites**

- Completion of WR 121.
- Completion of MTH 58, MTH 63 or MTH 65.
- Completion of MP 111 or successful completion of a challenge exam offered on campus.
- Completion of CAS 133 or similar course that includes Microsoft Office within the last ten years.
- All CAS, HIM, MP, MTH and WR courses must be completed with a "C" or "P" or better. For the application scoring process a "P" is counted as a "C".
- This is a limited entry program. Complete the program application and submit unofficial transcripts from any college attended other than PCC.

**Other Prerequisites**

- Students are encouraged to meet with the Cascade Allied Health Admissions Coordinator.

**Program Requirements**

**Academic Requirements**

- None

**Other Requirements**

- Once admitted, students are strongly encouraged to complete program advising with a Health Information Management program advisor.
- 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.
- 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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

**Course of Study**

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

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>HIM 110</td>
<td>Health Record Content in Acute Care Settings</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 120</td>
<td>Health Record Content in Acute Care Settings Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HIM 128</td>
<td>Anatomy &amp; Physiology for Health Information Management 1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HIM 182</td>
<td>Healthcare Delivery Systems</td>
<td>3</td>
</tr>
<tr>
<td>Second Term</td>
<td>HIM 105</td>
<td>Ancillary Information Analysis</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HIM 107</td>
<td>Ancillary Information Analysis Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HIM 121</td>
<td>Legal and Ethical Aspects of Healthcare</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 129</td>
<td>Anatomy &amp; Physiology for Health Information Management 2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HIM 141</td>
<td>Health Record Content in Non-Acute Care Settings</td>
<td>3</td>
</tr>
<tr>
<td>Third Term</td>
<td>COMM 100*</td>
<td>Introduction to Communication</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or COMM 111</td>
<td>Public Speaking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HIM 131</td>
<td>Medical Science</td>
<td>5</td>
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<tr>
<td></td>
<td>HIM 136</td>
<td>Medications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 270</td>
<td>ICD Procedure Coding</td>
<td>4</td>
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<tr>
<td>Fourth Term</td>
<td>General Education</td>
<td></td>
<td>12</td>
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<tr>
<td>Fifth Term</td>
<td>HIM 275</td>
<td>CPT Coding</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 281</td>
<td>Data Management and Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 283</td>
<td>Health Information Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HIM 286</td>
<td>Data Management and Analysis Lab</td>
<td>2</td>
</tr>
<tr>
<td>Sixth Term</td>
<td>HIM 271</td>
<td>Quality Improvement in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HIM 273</td>
<td>ICD Diagnosis Coding</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>HIM 274</td>
<td>Quality Improvement in Healthcare Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HIM 282</td>
<td>Healthcare Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 285</td>
<td>Healthcare Financing and Compliance</td>
<td>3</td>
</tr>
<tr>
<td>Seventh Term</td>
<td>HIM 272</td>
<td>Health Information Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 276</td>
<td>Coding Capstone</td>
<td>2</td>
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<tr>
<td></td>
<td>HIM 277</td>
<td>Health Information Management Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>HIM 290</td>
<td>HIM Teams and Training</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HIM 293</td>
<td>Health Information Directed Practice</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credits:** 92

* Could be used as General Education.

**History**

Cascade Campus
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
Cascade Hall (CH), Room 306
971-722-5251

Rock Creek Campus
Building 5, Room 245
971-722-7327

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

Sylvania Campus
Social Science Building (SS), Room 201
971-722-4289

www.pcc.edu/programs/history/

**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
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

Admission Prerequisites

Academic Prerequisites
• College level reading and writing skills and basic math skills are required. Individual courses may have prerequisites which are included in the course description.

Other Prerequisites
• None

Program Requirements

Academic Requirements
• All ARCH, ART, BCT, COMM, and ID courses must be completed with a letter grade of "C" or better.

Other Requirements
• None

Interior Design 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. 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.

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>
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</tr>
<tr>
<td>ARCH 110</td>
<td>2</td>
</tr>
<tr>
<td>ART 116*</td>
<td>3</td>
</tr>
<tr>
<td>ID 122</td>
<td>3</td>
</tr>
<tr>
<td>ID 131</td>
<td>4</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
</tbody>
</table>

Second Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 124</td>
<td>3</td>
</tr>
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<td>ARCH 200</td>
<td>4</td>
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Third Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 136</td>
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<tr>
<td>COMM 111*</td>
<td>4</td>
</tr>
<tr>
<td>ID 128</td>
<td>3</td>
</tr>
<tr>
<td>ID 132§</td>
<td>3</td>
</tr>
<tr>
<td>ID 236§</td>
<td>3</td>
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Fourth Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 132</td>
<td>3</td>
</tr>
<tr>
<td>ID 135§</td>
<td>3</td>
</tr>
<tr>
<td>ID 138§</td>
<td>3</td>
</tr>
</tbody>
</table>

Fifth Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>ARCH 121</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 127</td>
<td>3</td>
</tr>
<tr>
<td>ID 121§</td>
<td>3</td>
</tr>
<tr>
<td>ID 123</td>
<td>3</td>
</tr>
<tr>
<td>ID Degree Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

Sixth Term
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 215*</td>
<td>3</td>
</tr>
<tr>
<td>ID 232</td>
<td>3</td>
</tr>
<tr>
<td>ID 234</td>
<td>3</td>
</tr>
<tr>
<td>ID Degree Electives</td>
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<tr>
<td>General Education</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Credits: 98

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

Interior Design Degree Electives

ART 102 Understanding the Visual Arts 4
ART 115* Basic Design - 2D Foundations 3
ART 117 Basic Design - 3D Foundations 3
ART 131A Drawing I 3
ART 141 Introduction to Photography 3
BCT 244 Kitchen and Bath Cabinet Installation 2
ID 238 Advanced Kitchen and Bath Planning 3
ID 280A Cooperative Education: Kitchen and Bath 2-6

One-Year Certificate
Kitchen and Bath (p. 126)
Design for Accessibility and Aging in Place (p. 126)

Less than One-Year Certificate
Sustainable Design (p. 126)
Less than One-Year: Career Pathway Certificate
Interior Furnishings (p. 127)

Kitchen and Bath One-Year Certificate
Minimum 50 credits. Students must meet all certificate requirements.

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>
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</thead>
<tbody>
<tr>
<td>ARCH 100</td>
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<td>ID 131</td>
<td>3</td>
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</tr>
<tr>
<td>Second Term</td>
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</tr>
<tr>
<td>ID 121</td>
<td>3</td>
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<tr>
<td>ID 132</td>
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<td>ID 138</td>
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<td>Third Term</td>
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<td>BCT 244</td>
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<td>ID 135</td>
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<td>ID 236</td>
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<td>ARCH 132</td>
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<td>Total Credits:</td>
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</table>

Sustainable Design Less Than One-Year Certificate
Minimum 43 credits. Students must meet all certificate requirements.

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>
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<tbody>
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<tr>
<td>ID 121</td>
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<tr>
<td>Design and Building Electives</td>
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<tr>
<td>General Environmental Electives</td>
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<tr>
<td>Second Term</td>
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<tr>
<td>ARCH 131</td>
<td>4</td>
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<td>ARCH 224</td>
<td>4</td>
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<tr>
<td>Design and Building Electives</td>
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<tr>
<td>General Environmental Electives</td>
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</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>ARCH 204</td>
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</tr>
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<td>ARCH 280</td>
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Design and Building Electives

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</tbody>
</table>

Design and Building Electives

<table>
<thead>
<tr>
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<tbody>
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<tr>
<td>2</td>
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<tr>
<td>2</td>
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<td>3</td>
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</table>

Design and Building Electives

<table>
<thead>
<tr>
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<tbody>
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</table>
General Environmental Electives

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

Interior Furnishings Career Pathway Certificate

Minimum 41 credits. Students must meet all certificate requirements. The Interior Furnishings Certificate Career Pathway. All courses are in the Interior Design AAS Degree.

Course of Study

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

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ARCH 110 Introduction to Architectural Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARCH 124 Introduction to Building Systems</td>
<td>3</td>
</tr>
<tr>
<td>ID 122 History of Furniture-Ancient to 1800</td>
<td>3</td>
</tr>
<tr>
<td>ID 131 Introduction to Interiors</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 100 Graphic Communication for Designers</td>
<td>3</td>
</tr>
<tr>
<td>ART 215 History of American Residential Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ID 120 Interior Products and Materials I</td>
<td>3</td>
</tr>
<tr>
<td>ID 123 History of Furniture-1800 to Present</td>
<td>3</td>
</tr>
<tr>
<td>ID 125 Computer Drafting for Interior Designers</td>
<td>3</td>
</tr>
<tr>
<td>ID 135 Professional Practices for Designers</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 121 Sustainable Materials for Residential Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 230 Textiles for Interiors</td>
<td>3</td>
</tr>
<tr>
<td>ID 232 Business Communication for Interior Design</td>
<td>3</td>
</tr>
<tr>
<td>ID 236 Lighting Design</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 41

International Studies

Sylvania Campus
Communication Technology (CT), Room 219
971-722-8023

Description

International Studies is an interdisciplinary field that examines the social, cultural, political, economic, environmental, and historical forces that formed and continue to shape our increasingly interconnected world. Through exploring diverse cultural and geographic regions and analyzing how international and transnational relationships have evolved over time, students will develop a multidimensional perspective of the world —and their place within it— informed with the awareness that global events, issues, and relationships are intrinsically tied to cultural values, geography, economics, and history.

A program in International Studies provides an excellent foundation for students considering transfer degrees and careers in fields such as business, government, the law, journalism, international relations, public health, urban planning, and education. The careers of students earning CTE degrees will also be enhanced if they enter the field with a solid founding in global issues.

International Studies courses require college-level reading and writing skills, and can apply towards the Associate of Arts Oregon Transfer Degree (AAOT) requirements.

The Global Studies Focus Award (P. 180) at PCC prepares students for entry into International 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 other four-year institutions. Additional information on the Global Studies Focus Award can be found in the Focus Award section of the catalog.

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 Japanese before and are unsure of their placement are encouraged to consult with a Japanese language instructor since they will not be admitted to a course if their skill level is too advanced for the 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
971-722-4264

http://www.pcc.edu/programs/journalism/
Description

Journalism is the process of gathering, writing, documenting, editing and delivering news to an audience. It is fundamentally a democratic art, a way a free society engages in conversation about what is noteworthy or important to its people. In part, the study of journalism enables students to both understand the practices and analyze the impact of media.

PCC offers courses in journalism that introduce and develop skills needed to be media practitioners as well as those that teach media literacy. Students who take journalism courses find they help develop critical thinking skills and effective research and writing techniques for various media. They also enhance their understanding of the role and responsibilities of journalists and the effects of all types of media on culture and society. PCC journalism courses are transferable to any Oregon college or university; select courses fulfill General Education requirements for the AAOT degrees.

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 and environmental landscape management. 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. Those specializing in environmental landscape management will work in sustainable landscape practices including bioswales, greenroofs and restoration. 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.

The Landscape Technology AAS Degree courses are designed to develop knowledge and skills in plant care, plant identification, tree care, soils, irrigation, landscape business operations, estimating and bidding, 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. Students are prepared for landscape construction work including installing hardscapes, irrigation and drainage systems and planting. Students are also prepared for landscape management work including maintaining residential, estate, commercial and public properties, golf courses, private and public gardens, and parks.

The Landscape Technology Design AAS Degree courses are developed to build knowledge and skills in plant identification, soils, irrigation, site measurement and analysis, drafting and CAD. Students completing the curriculum will have the skills needed to produce landscape designs. 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 landscape contractors, landscape designers, or be self employed.

The Environmental Landscape Management Technology AAS Degree courses 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.

The Landscape Service Technician Certificate core of courses in the first year are 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 management companies. Credits earned through this degree apply to subsequent LAT certificates and degrees.

The Landscape Entry Level Certificate courses prepare students for entry level work in landscape management and/or construction. Credits earned through this degree apply to subsequent LAT certificates and degrees.

Following the listed sequence of courses 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

Environmental Landscape Management Technology

Less than One-Year Certificate

Landscape Service Technician Career Pathway Certificate
Landscape Technology Entry Level Career Pathway Certificate

Admission Prerequisites

Academic Prerequisites

• All landscape students are required to place into RD 115, WR 115 and MTH 60. Check appropriate course descriptions for individual course requirements.

Other Prerequisites

• None

Program Requirements

Academic Requirements

Requirements vary depending upon the degree or certificate. See following details:

• Landscape Technology AAS, Landscape Design AAS, Landscape Service Technician Certificate, and Landscape Technology Entry Level Career Pathways Certificate:
• All LAT, HOR, CSS, and MSD courses must be completed for a grade of “C” or “P” or better.

• Environmental Landscape Management Technology AAS:
  • All LAT, HOR, CSS, BI, ESR, and MSD courses must be completed for a grade of “C” or “P” or better.

Other Requirements
  • None

Associate of Applied Science Degree
Landscape Technology (p. 129)
Landscape Technology: Design (p. 130)
Environmental Landscape Management Technology (p. 131)

Landscape 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. 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.

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

First Term
LAT 101 Introduction to the Landscape Industry 2
LAT 236§ Landscape Math 3
Plant ID Electives 3
General Education 4

Second Term
CSS 200 Soils and Plant Nutrition 4
LAT 115 Tool and Equipment Safety, Operation and Maintenance 3
LAT 272 Sustainable Landscaping 3
Plant ID Electives 3

Third Term
LAT 102 Plant Establishment and Maintenance 3
LAT 108 Landscape Irrigation I 3
Plant ID Electives 3
General Education 4

Fourth Term
LAT 280A Cooperative Education: Landscape 3
Landscape Technology Electives 3
General Education 8

Fifth Term
LAT 106 Basic Horticulture 4
LAT 111 Landscape Construction Practices 3
LAT 223 Site Surveying and Analysis 3
LAT 240 Tree Care 3

Sixth Term
LAT 104 Pesticides 3
LAT 243 Landscape Business Operations 3
LAT 264 Landscape Estimating and Bidding 3

Seventh Term
Landscape Technology Electives 3

Eighth Term
LAT 280A Cooperative Education: Landscape 3
MSD 101 Principles of Management and Supervision 3
Landscape Technology Electives 3

Total Credits: 97

§ 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.

Landscape Technology Degree Electives
HOR 226 Plant Materials - Deciduous 3
HOR 227 Plant Materials - Evergreens 3
HOR 228 Plant Materials - Flowering 3
HOR 255 Spring Annuals and Perennials 3
HOR 266 Interior Plants 3
HOR 272 Summer Annuals & Perennials 3
HOR 285 Permaculture Design 7
HOR 290 Introduction to Landscape Design 3
HOR 291 Landscape Design Process 3
LAT 109 Plant Propagation 3
LAT 110 Grounds Maintenance 3
LAT 112 Plant Propagation 1

LAT 211 Landscape Construction Practices II 3
LAT 214 Plant Composition I 3
LAT 217 Landscape Drafting 3
LAT 219 Landscape Illustration 3
LAT 224 Grading and Drainage 3
LAT 225 Water Gardens 3
LAT 232 Landscape Irrigation II 4
LAT 235 Tree Care-Fall 3
LAT 240 Tree Care 3
LAT 241 Turfgrass Cultural Practices 3
LAT 250 Plant Diseases, Insects and Weed Identification 3
LAT 262 Native Plants of Oregon 3
LAT 271 Computer Aided Landscape Design 3
LAT 272 Sustainable Landscaping 3
LAT 273 Sustainable Landscape Water Management 3
LAT 275 Introduction to Landscape Night Lighting 3
LAT 278 Oregon LCP Exam Preparation 3
LAT 279 Computer Aided Landscape Design II 3
**LAT 280C**  Cooperative Work Experience- Landscape Design

### Plant Identification Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HOR 226</td>
<td>Plant Materials - Deciduous</td>
<td>4</td>
</tr>
<tr>
<td>HOR 227</td>
<td>Plant Materials - Evergreens</td>
<td>4</td>
</tr>
<tr>
<td>HOR 228</td>
<td>Plant Materials - Flowering</td>
<td>4</td>
</tr>
<tr>
<td>HOR 272</td>
<td>Summer Annuals &amp; Perennials</td>
<td>3</td>
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<tr>
<td>LAT 262</td>
<td>Native Plants of Oregon</td>
<td>3</td>
</tr>
</tbody>
</table>

### Landscape Design AAS Degree

Minimum 91 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.

#### Course of Study

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

<table>
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<th>Course Code</th>
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<th>Credits</th>
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|                  | LAT 276     | Employment & Careers in the Landscape Industry  | 2       |
|                  | LAT 280C§   | Cooperative Work Experience- Landscape Design   | 3       |
|                  | LAT 276     | Landscape Design Electives                      | 3       |
|                  | Total Credits: |                                                   | 91      |

§ Course cannot be substituted with another course.

1 Students with one year documented work experience in landscape design may take an additional 3 credits of LAT elective courses in lieu of cooperative work experience. Arrange with landscape department chair.

### Landscape Design Degree Electives

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<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>HOR 272</td>
<td>Summer Annuals &amp; Perennials</td>
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</table>
Environmental Landscape Management 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 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.

Course of Study

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

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|BI 101| Biology | 4 |
|BI 101H| Biology: Honors | 4 |
|BI 102| Biology | 4 |
|BI 103| Biology | 4 |
|BI 141| Habitats: Life of the Forest | 4 |
|BI 142| Habitats: Marine Biology | 4 |
|BI 143| Habitats: Fresh Water Biology | 4 |
|BI 145| Intro. to Fish and Wildlife Conservation and Management | 4 |
|BI 160| Ecology/Field Biology: Coast | 2 |
|BI 161| Ecology/Field Bio: Great Basin | 2 |
|BI 163| Organic Gardening | 4 |
|BI 164| Bird ID and Ecology | 4 |
|BI 198| Independent Study - Biology | 1-4 |
|BI 200A| Principles of Ecology: Field Biology | 2 |
|BI 200B| Principles of Ecology: Field Biology | 4 |
|BI 200C| Principles of Ecology: Field Biology | 6 |
|BI 202| Botany: An Introduction to the Plant Kingdom | 4 |
|BI 211| Principles of Biology | 5 |
|BI 212| Principles of Biology | 5 |
|BI 213| Principles of Biology | 5 |
|BI 280A| Cooperative Education: Biology | 1-10 |
|BI 298| Independent Study | 1-4 |
|ESR 140| Introduction to Sustainability | 4 |
|ESR 141| Introduction to Individual Sustainability | 4 |
|ESR 171| Environmental Science: Biological Perspectives | 4 |
|ESR 172| Environmental Science: Chemical Perspectives | 4 |
|ESR 173| Environmental Science: Geological Perspectives | 4 |
|ESR 203| Applied Environmental Studies: Project | 4 |
|ESR 298| Independent Study: Environmental Science | 1-4 |
|GEO 242| GIS Programming | 4 |
|GEO 265| Introduction to GIS (Geographical Information Systems) | 4 |
|GEO 266| GIS Analysis | 4 |
|GEO 267| Application Topics in Geographic Information Systems | 4 |
|HOR 226| Plant Materials - Deciduous | 3 |
|HOR 227| Plant Materials - Evergreens | 3 |
|HOR 228| Plant Materials - Flowering | 3 |
|HOR 255| Spring Annuals and Perennials | 3 |
|HOR 266| Interior Plants | 3 |

§ 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.
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<td>HOR 291</td>
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### Less than One-Year Certificate: Career Pathway Certificate

**Landscape Service Technician (p. 132)**

**Landscape Technology Entry Level (p. 133)**

### Landscape Service Technician Career Pathway Certificate

Minimum 33 credits. Students must meet all certificate requirements.

The Landscape Service Technician Certificate is a Career Pathway. All courses are contained in the Landscape Technology AAS Degree.

#### Landscape Service Technician Certificate Courses

**First Term**

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<td>3</td>
</tr>
</tbody>
</table>

**Second Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSS 200</td>
<td>Soils and Plant Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>LAT 274</td>
<td>Sustainable Landscaping</td>
<td>3</td>
</tr>
<tr>
<td>Landscape Service Technician Electives</td>
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<td>Plant ID Electives</td>
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**Third Term**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 102</td>
<td>Plant Establishment and Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>LAT 108</td>
<td>Landscape Irrigation I</td>
<td>3</td>
</tr>
<tr>
<td>Landscape Service Technician Electives</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Landscape Technology Entry Level Career Pathway Certificate

Minimum 17 credits. Students must meet all certificate requirements. The Landscape Technology Entry Level Certificate is a Career Pathway. All courses are contained in the Landscape Technology AAS Degree.

Landscape Service Technician Certificate Courses

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>LAT 101</td>
<td>Introduction to the Landscape Industry</td>
</tr>
<tr>
<td>LAT 236</td>
<td>Landscape Math</td>
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</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 272</td>
<td>Sustainable Landscaping</td>
</tr>
<tr>
<td>Plant ID Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LAT 102</td>
<td>Plant Establishment and Maintenance</td>
</tr>
<tr>
<td>Plant ID Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 17

Plant Identification Electives

| HOR 226 | Plant Materials - Deciduous | 4 |
| HOR 227 | Plant Materials - Evergreens | 4 |
| HOR 228 | Plant Materials - Flowering | 4 |
| HOR 272 | Summer Annuals & Perennials | 3 |
| LAT 262 | Native Plants of Oregon | 3 |

Literature

Cascade Campus
Cascade Hall (CH)
Room 208 & 306
971-722-5251

Rock Creek Campus
Building 3, Room 201
971-722-7522 or 971-722-7806

Southeast Campus
Mt. Scott Hall (MSH), Room 106
971-722-6146

Sylvania Campus
Communications Technology Building (CT), Room 219
971-722-4266

www.pcc.edu/programs/literature/

Description

Literature classes help students better comprehend cultural complexity as well as help them develop cultural awareness. PCC's literature program teaches and promotes an understanding of the significance and history of various literatures and fosters an appreciation for the richness and variety of literary texts. Through improving their comprehension and appreciation of written language, students will be more likely to engage actively and effectively in their many communities, as they transfer to universities and/or pursue career technical education. Acknowledging others voices, evaluating authority, recognizing subtle biases and prejudices, integrating the ideas of others with one's own are all skills essential to active citizenship developed through the study of literature.

The prerequisite for PCC literature courses is 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. 176) 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
Manual Machining

Less than One-Year: Career Pathway Certificate
Manufacturing Technician
Admission Prerequisites

Degree and One-Year Certificate seeking students entering the Machine Manufacturing Technology (MMT) program must meet the following requirements:

Academic Prerequisites

• Successful completion of (RD 90 and WR 90) or (ESOL 260 and ESOL 262 and ESOL 254) and MTH 65 or equivalent placement test scores.
• Machine Manufacturing Technology is a limited entry program. Certificate seeking students must meet with a program advisor, complete a department entry document, and may potentially be placed on a wait list for an entry position.

Other Prerequisites

• None

Program Requirements

Academic Requirements

• In order to continue beyond the Manufacturing Technician Certificate, students must complete MCH 121 with a grade of “C” or “P” or better.

Other Requirements

• None

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. A maximum of 24 credits of Pass/No Pass and a maximum of 24 credits of cooperative education (MCH 280) are allowed in the Machine Manufacturing Technology AAS Degree. Students should consult with program advisors for course planning.

Machine Manufacturing Technology Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCH 100</td>
<td>Machine Tool Basics</td>
<td>1</td>
</tr>
<tr>
<td>MCH 105</td>
<td>Blueprint Reading I</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 110</td>
<td>Blueprint Reading II</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 115</td>
<td>Geometric Dimensioning and Tolerancing</td>
<td>3.5</td>
</tr>
<tr>
<td>MCH 120</td>
<td>§ Machine Shop Math</td>
<td>2</td>
</tr>
<tr>
<td>MCH 121</td>
<td>Manufacturing Processes I</td>
<td>4</td>
</tr>
<tr>
<td>MCH 125</td>
<td>Speeds and Feeds</td>
<td>1</td>
</tr>
<tr>
<td>MCH 130</td>
<td>§ Machine Shop Trigonometry</td>
<td>2.5</td>
</tr>
<tr>
<td>MCH 135</td>
<td>Basic Measuring Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 145</td>
<td>Layout Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 150</td>
<td>Precision Measuring Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 160</td>
<td>Drilling Machines and Operations</td>
<td>2</td>
</tr>
<tr>
<td>MCH 175</td>
<td>Band Saws</td>
<td>1</td>
</tr>
<tr>
<td>MCH 180</td>
<td>Turning Machines and Operations</td>
<td>4</td>
</tr>
<tr>
<td>MCH 190</td>
<td>Boring on the Lathe</td>
<td>1</td>
</tr>
<tr>
<td>MCH 195</td>
<td>Threading on the Lathe</td>
<td>3</td>
</tr>
<tr>
<td>MCH 205</td>
<td>Vertical Milling Machines and Operations</td>
<td>3.5</td>
</tr>
<tr>
<td>MCH 225</td>
<td>Surface Grinding Machines and Operations</td>
<td>2</td>
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<tr>
<td>MCH 259</td>
<td>CNC Programming-Lathe</td>
<td>5</td>
</tr>
<tr>
<td>MCH 268</td>
<td>CNC Programming-Mill</td>
<td>5</td>
</tr>
<tr>
<td>MCH 272</td>
<td>Mastercam Level I</td>
<td>5</td>
</tr>
<tr>
<td>MCH 273</td>
<td>Mastercam Level II</td>
<td>5</td>
</tr>
<tr>
<td>MCH 278</td>
<td>CNC Operation - Mill</td>
<td>4</td>
</tr>
<tr>
<td>MCH 279</td>
<td>CNC Operation - Lathe</td>
<td>4</td>
</tr>
<tr>
<td>MCH 280</td>
<td>Cooperative Education: Machine Technology</td>
<td>4</td>
</tr>
<tr>
<td>MCH 287A</td>
<td>Technical Skill Assessment in CNC Turning</td>
<td>3</td>
</tr>
<tr>
<td>MCH 288A</td>
<td>Technical Skill Assessment in CNC Milling</td>
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<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
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<tr>
<td>MCH Degree Electives</td>
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<tr>
<td>General Education</td>
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</table>

§ Course cannot be substituted for another course.

Machine Manufacturing Technology Degree Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>MCH 101</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>MCH 102</td>
<td>Introduction to Manufacturing</td>
</tr>
<tr>
<td>MCH 121</td>
<td>Manufacturing Processes I</td>
</tr>
<tr>
<td>MCH 123</td>
<td>Sheet Metal Fabrication</td>
</tr>
<tr>
<td>MCH 157</td>
<td>Project Machine Technology I</td>
</tr>
<tr>
<td>MCH 158</td>
<td>Project Machine Technology II</td>
</tr>
<tr>
<td>MCH 159</td>
<td>Project Machine Technology III</td>
</tr>
<tr>
<td>MCH 210</td>
<td>Project Machine Technology IV</td>
</tr>
<tr>
<td>MCH 211</td>
<td>Project Machine Technology V</td>
</tr>
<tr>
<td>MCH 212</td>
<td>Project Machine Technology VI</td>
</tr>
<tr>
<td>MCH 213</td>
<td>Project Machine Technology VII</td>
</tr>
<tr>
<td>MCH 214</td>
<td>Project Machine Technology VIII</td>
</tr>
<tr>
<td>MCH 215</td>
<td>Horizontal Milling Machines</td>
</tr>
<tr>
<td>MCH 222</td>
<td>Coordinate Measuring Machine Operation</td>
</tr>
<tr>
<td>MCH 227</td>
<td>CNC Grinder Operation</td>
</tr>
<tr>
<td>MCH 228</td>
<td>Abrasives</td>
</tr>
<tr>
<td>MCH 229</td>
<td>Rapid Prototyping</td>
</tr>
<tr>
<td>MCH 235</td>
<td>Tool Sharpening</td>
</tr>
<tr>
<td>MCH 240</td>
<td>Cutting Tool Technology</td>
</tr>
<tr>
<td>MCH 245</td>
<td>Metallurgy</td>
</tr>
<tr>
<td>MCH 262</td>
<td>CNC Conversational Controls</td>
</tr>
<tr>
<td>MCH 263</td>
<td>CNC Cycle Time Reduction</td>
</tr>
<tr>
<td>MCH 266</td>
<td>Advanced CNC Programming</td>
</tr>
<tr>
<td>MCH 276</td>
<td>Mastercam Solids</td>
</tr>
<tr>
<td>MCH 277</td>
<td>Mastercam CNC/CAM Project</td>
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<tr>
<td>MCH 280</td>
<td>Cooperative Education: Machine Technology</td>
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<tr>
<td>MCH 282</td>
<td>CNC Router Operation</td>
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<td>MCH 283</td>
<td>CNC Router Mastercam Programming</td>
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<tr>
<td>MCH 290</td>
<td>Mastercam Fundamentals Orientation</td>
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<tr>
<td>MCH 291</td>
<td>Laser Cutting and Engraving Fundamentals</td>
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<tr>
<td>MCH 292</td>
<td>FDM Additive Manufacturing Fundamentals</td>
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<td>MCH 293</td>
<td>CNC Router Fundamentals Orientation</td>
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<tr>
<td>MCH 294</td>
<td>3 Dimensional Digital Laser Scanning Fundamentals</td>
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</table>
### One-Year Certificate

CNC Turning (p. 135)  
CNC Milling (p. 135)  
Manual Machining (p. 135)

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

Manufacturing Technician (p. 135)

### CNC Turning One-Year Certificate

Minimum 48.5 credits. Students must meet all certificate requirements.

**CNC Turning Certificate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCH 100</td>
<td>Machine Tool Basics</td>
<td>1</td>
</tr>
<tr>
<td>MCH 105</td>
<td>Blueprint Reading I</td>
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</tr>
<tr>
<td>MCH 110</td>
<td>Blueprint Reading II</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 115</td>
<td>Geometric Dimensioning and Tolerancing</td>
<td>3.5</td>
</tr>
<tr>
<td>MCH 120</td>
<td>Machine Shop Math</td>
<td>2</td>
</tr>
<tr>
<td>MCH 121</td>
<td>Manufacturing Processes I</td>
<td>4</td>
</tr>
<tr>
<td>MCH 125</td>
<td>Speeds and Feeds</td>
<td>1</td>
</tr>
<tr>
<td>MCH 130</td>
<td>Machine Shop Trigonometry</td>
<td>2.5</td>
</tr>
<tr>
<td>MCH 135</td>
<td>Basic Measuring Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 145</td>
<td>Layout Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 150</td>
<td>Precision Measuring Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 180</td>
<td>Turning Machines and Operations</td>
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</tr>
<tr>
<td>MCH 190</td>
<td>Boring on the Lathe</td>
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</tr>
<tr>
<td>MCH 195</td>
<td>Threading on the Lathe</td>
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<tr>
<td>MCH 259</td>
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<tr>
<td>MCH 279</td>
<td>CNC Operation - Lathe</td>
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<tr>
<td>MCH 280</td>
<td>Cooperative Education: Machine Technology</td>
<td>4</td>
</tr>
<tr>
<td>MCH 287A</td>
<td>Technical Skill Assessment in CNC Turning</td>
<td>3</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**  
48.5

### CNC Milling One-Year Certificate

Minimum 49 credits. Students must meet all certificate requirements.

**CNC Milling Certificate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCH 100</td>
<td>Machine Tool Basics</td>
<td>1</td>
</tr>
<tr>
<td>MCH 105</td>
<td>Blueprint Reading I</td>
<td>1.5</td>
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<tr>
<td>MCH 110</td>
<td>Blueprint Reading II</td>
<td>1.5</td>
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<tr>
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<td>Geometric Dimensioning and Tolerancing</td>
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</tr>
<tr>
<td>MCH 120</td>
<td>Machine Shop Math</td>
<td>2</td>
</tr>
<tr>
<td>MCH 121</td>
<td>Manufacturing Processes I</td>
<td>4</td>
</tr>
<tr>
<td>MCH 125</td>
<td>Speeds and Feeds</td>
<td>1</td>
</tr>
<tr>
<td>MCH 130</td>
<td>Machine Shop Trigonometry</td>
<td>2.5</td>
</tr>
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<td>MCH 135</td>
<td>Basic Measuring Tools</td>
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<tr>
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<td>Layout Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 150</td>
<td>Precision Measuring Tools</td>
<td>1.5</td>
</tr>
<tr>
<td>MCH 205</td>
<td>Vertical Milling Machines and Operations</td>
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</tr>
<tr>
<td>MCH 268</td>
<td>CNC Programming-Mill</td>
<td>5</td>
</tr>
<tr>
<td>MCH 272</td>
<td>Mastercam Level I</td>
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<tr>
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</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**  
49

### Manufacturing Technician Career Pathway Certificate

Minimum 21.5 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.

**Manufacturing Technician Certificate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCH 100</td>
<td>Machine Tool Basics</td>
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</tr>
<tr>
<td>MCH 105</td>
<td>Blueprint Reading I</td>
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</tr>
<tr>
<td>MCH 110</td>
<td>Blueprint Reading II</td>
<td>1.5</td>
</tr>
<tr>
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<tr>
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<td>MCH 121</td>
<td>Manufacturing Processes I</td>
<td>4</td>
</tr>
<tr>
<td>MCH 125</td>
<td>Speeds and Feeds</td>
<td>1</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits**  
21.5
Management/Supervisory Development

Southeast Campus
Student Commons Building, (SCOM) 214
971-722-6146 or
971-722-6147

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: Career Pathway Certificates
Customer Service Professional
Customer Service Manager

Admission Prerequisites

Academic Prerequisites

• None

Other Prerequisites

• None

Program Requirements

Academic Requirements

• Degree seeking students must complete with a grade of "C" or "P" or better MTH 58, MTH 63 or MTH 65, or higher or equivalent placement test score.

Other Requirements

• None

Management/Supervisory Development AAS Degree

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program advisors for course planning.

Management/Supervisory Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>or BA 111</td>
<td>Introduction to Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</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>
<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 111</td>
<td>Workplace Correspondence</td>
<td>3</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
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<td>MSD 117</td>
<td>Customer Relations</td>
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<tr>
<td>MSD 121</td>
<td>Leadership Skill Development</td>
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<tr>
<td>MSD 130</td>
<td>Creative Problem Solving</td>
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</tr>
<tr>
<td>MSD 200</td>
<td>Organizations and Social Responsibility</td>
<td>3</td>
</tr>
<tr>
<td>MSD 206</td>
<td>The Troubled Employee</td>
<td>3</td>
</tr>
<tr>
<td>MSD 216</td>
<td>Budgeting for Managers</td>
<td>3</td>
</tr>
<tr>
<td>or BA 213</td>
<td>Managerial Accounting</td>
<td></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 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>MSD Program/Workshop Electives</td>
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<tr>
<td>MSD Support Electives</td>
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<tr>
<td>Remaining General Education</td>
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</table>

Total Credits 90

* Could be used as General Education

Management/Supervisory Support Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CG 140A</td>
<td>Career and Life Planning</td>
<td>3</td>
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<tr>
<td>CG 140B</td>
<td>Career and Life Planning</td>
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<td>CG 140C</td>
<td>Career and Life Planning</td>
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### Management/Supervisory Program/Workshop Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>MSD 203</td>
<td>Emotional Intelligence in Work</td>
<td>3</td>
</tr>
<tr>
<td>MSD 279A</td>
<td>Workplace Quality Improvement</td>
<td>3</td>
</tr>
<tr>
<td>MSD 280A</td>
<td>Coop.Ed.: Management and Supervisory Development</td>
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</tr>
<tr>
<td>MSD 280B</td>
<td>Coop. Ed.: Management and Supervisory Development Seminar</td>
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</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.

### Management/Supervisory Development

#### One-Year Certificate

Management/Supervisory Development (p. 137)

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

Customer Service Professional (p. 138)
Customer Service Management (p. 138)

### Management/Supervisory Development One-Year Certificate

Minimum 45 credits. Students must meet all certificate requirements.

#### Management/Supervisory Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
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<tr>
<td>or BA 111</td>
<td>Introduction to Accounting</td>
<td></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>
<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 111</td>
<td>Workplace Correspondence</td>
<td>3</td>
</tr>
<tr>
<td>MSD 115</td>
<td>Improving Work Relations</td>
<td>3</td>
</tr>
<tr>
<td>MSD 200</td>
<td>Organizations and Social Responsibility</td>
<td>3</td>
</tr>
<tr>
<td>MSD 206</td>
<td>The Troubled Employee</td>
<td>3</td>
</tr>
<tr>
<td>MSD 222</td>
<td>Human Resource Management: Personnel</td>
<td>3</td>
</tr>
<tr>
<td>MSD 216</td>
<td>Budgeting for Managers</td>
<td>3</td>
</tr>
<tr>
<td>or BA 213</td>
<td>Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
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**Total Credits**: 45

### Management/Supervisory Program/Workshop Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 150</td>
<td>Intro to Entrepreneurship</td>
<td>4</td>
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<tr>
<td>CAS 220</td>
<td>Project Management - Beginning MS Project</td>
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<tr>
<td>MSD 110</td>
<td>Gender Conflict Resolution</td>
<td>3</td>
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<tr>
<td>MSD 113</td>
<td>Influence Without Authority</td>
<td>1</td>
</tr>
<tr>
<td>MSD 116</td>
<td>Creative Thinking for Innovative Change</td>
<td>1</td>
</tr>
<tr>
<td>MSD 119A</td>
<td>Intercultural Communication</td>
<td>1</td>
</tr>
<tr>
<td>MSD 122</td>
<td>Motivation Without Manipulation</td>
<td>1</td>
</tr>
<tr>
<td>MSD 122A</td>
<td>Strength Based Leadership</td>
<td>1</td>
</tr>
<tr>
<td>MSD 123</td>
<td>Job Search Strategies</td>
<td>1</td>
</tr>
<tr>
<td>MSD 123A</td>
<td>Innovation and New Products</td>
<td>1</td>
</tr>
<tr>
<td>MSD 128</td>
<td>Crisis Intervention: Handling the Difficult Person</td>
<td>1</td>
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<tr>
<td>MSD 133</td>
<td>Brave New Workplace: Strategies to Excel in World of Change</td>
<td>1</td>
</tr>
<tr>
<td>MSD 134</td>
<td>Who Moved My Cheese</td>
<td>1</td>
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<tr>
<td>MSD 138A</td>
<td>Male/Female Communication Differences</td>
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<td>MSD 138B</td>
<td>Exploring the 7 Habits of Highly Effective People</td>
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<tr>
<td>MSD 140</td>
<td>Management Workshops</td>
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<tr>
<td>MSD 141A</td>
<td>The Time-Stress-Communication Triangle</td>
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<tr>
<td>MSD 142B</td>
<td>Thriving in Transition</td>
<td>1</td>
</tr>
<tr>
<td>MSD 148</td>
<td>Asserting Yourself in the Workplace</td>
<td>1</td>
</tr>
<tr>
<td>MSD 150</td>
<td>Listening Skills</td>
<td>1</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 159</td>
<td>Stress Control</td>
<td>1</td>
</tr>
<tr>
<td>MSD 160A</td>
<td>Communication Styles</td>
<td>1</td>
</tr>
<tr>
<td>MSD 161</td>
<td>Customer Relations</td>
<td>1</td>
</tr>
<tr>
<td>MSD 162</td>
<td>Coping with Angry Feelings and Angry People</td>
<td>1</td>
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<tr>
<td>MSD 164</td>
<td>Better Memos and Letters</td>
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</tr>
<tr>
<td>MSD 174</td>
<td>Time Management</td>
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<tr>
<td>MSD 174B</td>
<td>Leadership &amp; Effective Decision Making</td>
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<tr>
<td>MSD 175B</td>
<td>Direct Communication in the Workplace</td>
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<tr>
<td>MSD 176</td>
<td>Nonverbal Communication</td>
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<td>Interpersonal Communication</td>
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<td>Team Building</td>
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<td>MSD 177B</td>
<td>Coaching Great Performance</td>
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<tr>
<td>MSD 179B</td>
<td>Avoid Burnout: Build Resilience</td>
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<tr>
<td>MSD 180A</td>
<td>Goal Setting and Productivity</td>
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<tr>
<td>MSD 187</td>
<td>Humor in the Workplace</td>
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<td>MSD 188B</td>
<td>Self Management for Success</td>
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<tr>
<td>MSD 192A</td>
<td>Project Management</td>
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<td>MSD 193</td>
<td>Self Esteem the Key to Success</td>
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<tr>
<td>MSD 193A</td>
<td>Leadership Skill Development</td>
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<tr>
<td>MSD 194</td>
<td>Effective Presentation Skills</td>
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</tr>
<tr>
<td>MSD 202</td>
<td>Training the Employee</td>
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<tr>
<td>MSD 203</td>
<td>Emotional Intelligence in Work</td>
<td>3</td>
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<td>MSD 279A</td>
<td>Workplace Quality Improvement</td>
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<tr>
<td>MSD 280A</td>
<td>Coop.Ed.: Management and Supervisory Development</td>
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<tr>
<td>MSD 280B</td>
<td>Coop. Ed.: Management and Supervisory Development Seminar</td>
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</tr>
<tr>
<td>MSD 298</td>
<td>Trends in Management and Supervision</td>
<td>6</td>
</tr>
</tbody>
</table>

Any BA, EC, HE, PE and any CTE courses not found within the course of study for the degree.  

1 A maximum of 3 PE credits can be applied to this degree.
A maximum of 9 1-credit workshops/courses may be used toward a program award, certificate or degree.

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. The Customer Service Professional Certificate is a Career Pathway.

Customer Service Professional Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<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>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 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>
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Customer Service Management Career Pathway Certificate

Customer Service Management Certificate Courses

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<tr>
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<td>Computer Concepts I</td>
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<td>Introduction to Business Technology</td>
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<tr>
<td>MSD 101</td>
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<td>3</td>
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<td>MSD 105</td>
<td>Workplace Communication Skills</td>
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<td>MSD 107</td>
<td>Organizations &amp; People</td>
<td>3</td>
</tr>
<tr>
<td>MSD 113</td>
<td>Influence Without Authority</td>
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<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>
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<tr>
<td>MSD 117</td>
<td>Customer Relations</td>
<td>3</td>
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<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>
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<tr>
<td>Total Credits</td>
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</table>

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 111</td>
<td>Workplace Correspondence</td>
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</tr>
<tr>
<td>MSD 206</td>
<td>The Troubled Employee</td>
<td>3</td>
</tr>
<tr>
<td>MSD 200</td>
<td>Organizations and Social Responsibility</td>
<td>3</td>
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<tr>
<td>Choose 3 credits from the following:</td>
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<td></td>
</tr>
<tr>
<td>MSD 119A</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
<tr>
<td>MSD 123</td>
<td>Job Search Strategies</td>
<td>3</td>
</tr>
<tr>
<td>MSD 160A</td>
<td>Communication Styles</td>
<td>3</td>
</tr>
<tr>
<td>MSD 174B</td>
<td>Leadership &amp; Effective Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>MSD 188B</td>
<td>Self Management for Success</td>
<td>3</td>
</tr>
<tr>
<td>MSD 194</td>
<td>Effective Presentation Skills</td>
<td>3</td>
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<tr>
<td>Total Credits</td>
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</tbody>
</table>
Change/Innovation Management
Minimum of 18 credits to include:

- MSD 101 Principles of Management and Supervision 3
- MSD 121 Leadership Skill Development 3
- MSD 130 Creative Problem Solving 3
- MSD 203 Emotional Intelligence in Work 3
- MSD 279A Workplace Quality Improvement 3

Choose 3 credits from the following:

- MSD 116 Creative Thinking for Innovative Change
- MSD 122 Motivation Without Manipulation
- MSD 134 Who Moved My Cheese
- MSD 142B Thriving in Transition
- MSD 179B Avoid Burnout: Build Resilience
- MSD 187 Humor in the Workplace

Total Credits 18

Conflict Management
Minimum of 18 credits to include:

- MSD 105 Workplace Communication Skills 3
- MSD 115 Improving Work Relations 3
- MSD 130 Creative Problem Solving 3
- MSD 203 Emotional Intelligence in Work 3
- MSD 206 The Troubled Employee 3

Choose 3 credits from the following:

- MSD 110 Gender Conflict Resolution
- MSD 141A The Time-Stress-Communication Triangle
- MSD 150 Listening Skills
- MSD 151 Working with Difficult People
- MSD 157 Conflict Management
- MSD 162 Coping with Angry Feelings and Angry People

Total Credits 18

Leadership
Minimum of 18 credits to include:

- MSD 101 Principles of Management and Supervision 3
- MSD 105 Workplace Communication Skills 3
- MSD 107 Organizations & People 3
- MSD 121 Leadership Skill Development 3
- MSD 203 Emotional Intelligence in Work 3

Choose 3 credits from the following:

- MSD 138B Exploring the 7 Habits of Highly Effective People
- MSD 176 Nonverbal Communication
- MSD 177 Team Building
- MSD 177B Coaching Great Performance
- MSD 180A Goal Setting and Productivity
- MSD 193A Leadership Skill Development

Total Credits 18

Project Management
Minimum of 18 credits are required:

- CAS 220 Project Management - Beginning MS Project 3
- MSD 105 Workplace Communication Skills 3
- MSD 123A Innovation and New Products 1
- MSD 279 Project Management - Intro 4
- MSD 279A Workplace Quality Improvement 3

Choose 4 credits from the following:

- BA 255 Project Management - Business Environments
- CIS 245 Project Management - Information Systems
- MSD 121 Leadership Skill Development
- MSD 116 Creative Thinking for Innovative Change
- MSD 174 Time Management
- MSD 177 Team Building

Total Credits 18

Human Resource Management
Minimum of 18 credits to include:

- MSD 105 Workplace Communication Skills 3
- MSD 206 The Troubled Employee 3
- MSD 115 Improving Work Relations 3
- MSD 222 Human Resource Management: Personnel 3
- MSD 223 Human Resource Management: Performance and Compensation

Choose 3 credits from the following:

- MSD 119A Intercultural Communication
- MSD 148 Asserting Yourself in the Workplace
- MSD 159 Stress Control
- MSD 160A Communication Styles
- MSD 177B Coaching Great Performance
- MSD 193 Self Esteem the Key to Success

Total Credits 18

Mathematics
Cascade Campus
Student Services Building (SSB), Room 313
971-722-5391 or 971-722-5564

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 203
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 200
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

---

**Admission Prerequisites**

**Academic Prerequisites**

- MET 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:
  - WR 115 or equivalent placement test score.

---

**Other Prerequisites**

- 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.

**Program Requirements**

**Academic Requirements**

- None

**Other Requirements**

- None

**Associate of Applied Science Degree**

Mechanical Engineering Technology (p. 140)
Mechanical Engineering Technology: Green Technology and Sustainability Option (p. 141)

**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.
### Course of Study

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

#### First Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>Statics</td>
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</tr>
<tr>
<td>CMET 111</td>
<td>Portland Design: Brews, Bridges and Bikes</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 102</td>
<td>Engineering Graphics</td>
<td>3</td>
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</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 121</td>
<td>Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122</td>
<td>Global Energy Physics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123§</td>
<td>Technical Algebra with Analytic Geometry</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 131</td>
<td>Applied Calculus</td>
<td>8</td>
</tr>
<tr>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
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</table>

#### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 101*</td>
<td>Inorganic Chemistry Principles</td>
<td>5</td>
</tr>
<tr>
<td>CMET 133</td>
<td>Materials Technology</td>
<td>3</td>
</tr>
<tr>
<td>CMET 221</td>
<td>Environmental Systems</td>
<td>3</td>
</tr>
<tr>
<td>CMET 226</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>COMM 100*</td>
<td>Introduction to Communication</td>
<td>4</td>
</tr>
<tr>
<td>or COMM 111</td>
<td>Public Speaking</td>
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</tr>
</tbody>
</table>

#### Fifth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 212</td>
<td>Thermodynamics I</td>
<td>4</td>
</tr>
<tr>
<td>CMET 211</td>
<td>Environmental Quality</td>
<td>4</td>
</tr>
<tr>
<td>CMET 241</td>
<td>Structural Steel Drafting</td>
<td>3</td>
</tr>
<tr>
<td>CMET 254</td>
<td>Employment and Professional Development Skills I</td>
<td>1</td>
</tr>
<tr>
<td>ENGR 262</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Sixth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 222</td>
<td>Thermodynamics II</td>
<td>4</td>
</tr>
<tr>
<td>CMET 223</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CMET 235</td>
<td>Machine Design</td>
<td>3</td>
</tr>
<tr>
<td>CMET 236</td>
<td>Structural Design</td>
<td>3</td>
</tr>
<tr>
<td>CMET 237</td>
<td>MET Applied Computer Aided Design</td>
<td>3</td>
</tr>
</tbody>
</table>

### Green Tech and Sustainability Degree Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 101</td>
<td>Inorganic Chemistry Principles</td>
<td>5</td>
</tr>
<tr>
<td>CMET 110</td>
<td>Statics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 111</td>
<td>Portland Design: Brews, Bridges and Bikes</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>CMET 121</td>
<td>Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122</td>
<td>Global Energy Physics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 123§</td>
<td>Technical Algebra with Analytic Geometry</td>
<td>4</td>
</tr>
<tr>
<td>CMET 131</td>
<td>Applied Calculus</td>
<td>8</td>
</tr>
<tr>
<td>CMET 133</td>
<td>Materials Technology</td>
<td>3</td>
</tr>
<tr>
<td>CMET 211</td>
<td>Environmental Quality</td>
<td>4</td>
</tr>
<tr>
<td>CMET 212</td>
<td>Thermodynamics I</td>
<td>4</td>
</tr>
<tr>
<td>CMET 213</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CMET 221</td>
<td>Environmental Systems</td>
<td>3</td>
</tr>
<tr>
<td>CMET 222</td>
<td>Thermodynamics II</td>
<td>4</td>
</tr>
<tr>
<td>CMET 223</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>CMET 226</td>
<td>Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>CMET 227</td>
<td>Applied Electricity Fundamentals</td>
<td>2</td>
</tr>
<tr>
<td>CMET 235</td>
<td>Machine Design</td>
<td>3</td>
</tr>
<tr>
<td>CMET 236</td>
<td>Structural Design</td>
<td>3</td>
</tr>
<tr>
<td>CMET 237</td>
<td>MET Applied Computer Aided Design</td>
<td>3</td>
</tr>
<tr>
<td>GEO 265‡</td>
<td>Introduction to GIS (Geographical Information Systems)</td>
<td>4</td>
</tr>
<tr>
<td>SOC 228‡</td>
<td>Introduction to Environmental Sociology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Remaining General Education</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>108</td>
</tr>
</tbody>
</table>

* COMM 100 and COMM 111 could be used as General Education

### Mechanical Engineering Technology Two-Year Certificate

Minimum 66 credits. Students must meet all certificate requirements.

#### Course of Study

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

#### First Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 110</td>
<td>Statics</td>
<td>4</td>
</tr>
<tr>
<td>CMET 111</td>
<td>Portland Design: Brews, Bridges and Bikes</td>
<td>4</td>
</tr>
<tr>
<td>CMET 112</td>
<td>Technical Algebra/Trigonometry</td>
<td>4</td>
</tr>
<tr>
<td>ENGR 102</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMET 121</td>
<td>Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CMET 122</td>
<td>Global Energy Physics</td>
<td>4</td>
</tr>
</tbody>
</table>

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**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.
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
CMET Human Relations Electives

Fourth Term
CH 101*  Inorganic Chemistry Principles
CMET 226  Dynamics
CMET 133  Materials Technology
CMET 221  Environmental Systems
COMM 100*  Introduction to Communication
or COMM 111 Public Speaking

Total Credits: 66

CMET Human Relations Electives

CG 191  Exploring Identity and Diversity for College Success
PSY 101  Psychology and Human Relations
PSY 201A  Introduction to Psychology - Part 1
PSY 202A  Introduction to Psychology - Part 2
PSY 214  Introduction to Personality
PSY 215  Human Development
PSY 216  Social Psychology
PSY 222  Family & Intimate Relationships
PSY 231  Human Sexuality
PSY 232  Human Sexuality
PSY 236  Psychology of Adult Development and Aging
PSY 239  Introduction to Abnormal Psychology
PSY 240  Personal Awareness and Growth
SOC 204  Sociology in Everyday Life
SOC 206  Social Problems
SOC 213  Diversity in the United States
SOC 218  Sociology of Gender
SOC 232  Death and Dying: Culture and Issues
WS 101  Women's Studies

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 within 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.

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

 Admission Prerequisites

Academic Prerequisites

• Completion with a grade of “C” or “P” better in the following: WR 121, MTH 60, BI 121, and MP 111.

• This is a limited entry program. Complete a Medical Assisting program application including recommendation forms and transcripts from all colleges attended other than PCC.

Other Prerequisites

• 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.

• 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.
Program Requirements

Academic Requirements

- None

Other Requirements

- Students must have transportation to clinical facilities throughout the Portland Metropolitan area and surrounding communities.

Medical Assisting One-Year Certificate

Minimum 49 credits. Students must meet all certificate requirements.

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>BI 122 Introduction to Human Anatomy &amp; Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>HE 113 First Aid&amp;CPR/AED Professional Rescuers/ HealthCare Providers</td>
<td>1</td>
</tr>
<tr>
<td>MA 112 Medical Office Assistant Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>MA 117 Medical Office Administrative Procedures</td>
<td>4</td>
</tr>
<tr>
<td>MA 118 Medical Office Administrative Procedures (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>MA 120 Introduction to Clinical Phlebotomy</td>
<td>1</td>
</tr>
<tr>
<td>MA 180 Coding and Reimbursement</td>
<td>2</td>
</tr>
<tr>
<td>PSY 101 Psychology and Human Relations</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 122 Medical Office Assistant Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>MA 123 Medical Office Clinical Procedures</td>
<td>4</td>
</tr>
<tr>
<td>MA 124 Medical Office Clinical Procedures (Lab)</td>
<td>2</td>
</tr>
<tr>
<td>MA 136 Medications</td>
<td>2</td>
</tr>
<tr>
<td>MLT 100 Medical Office Laboratory Orientation</td>
<td>3</td>
</tr>
<tr>
<td>MP 150 Introduction to Electronic Health Records</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 131 Introduction to Medical Science</td>
<td>5</td>
</tr>
<tr>
<td>MA 132 Medical Office Assistant Seminar III</td>
<td>1</td>
</tr>
<tr>
<td>MA 270 Clinical Practicum</td>
<td>6</td>
</tr>
<tr>
<td>MP 140 Introduction to Health Law and Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 49

CT Technologist Training Program

CT Technologists are important members of the health care team and work closely with Radiologists to produce diagnostic CT images. Computed Tomography requires additional training beyond the primary certification earned in Radiography. Nuclear Medicine Technologists who will perform PET/CT may enroll in this program, which meets the State of Oregon requirements for CT Training.

The CT Technologist Training Program is four terms in length (12 consecutive months). The program combines campus instruction with clinical education at affiliated hospitals. Students are required to satisfactorily complete the course of study with a C or better in each didactic course and a B or better in the clinical courses. Upon completion of this program, students will be qualified to sit for the national CT certification examination offered by the American Registry of Radiologic Technologists (ARRT).

Special admission required for registration. Applicants must be registry eligible or currently registered, in good standing, in Radiography or Nuclear Medicine to apply to the program. Acceptance into the program is based on clinical seat availability which varies from year to year.

MRI Technologist Training Program

MRI Technologists are important members of the health care team and work closely with Radiologists to produce diagnostic MR images. Magnetic Resonance Imaging requires additional training beyond the primary certification earned in Radiography, Nuclear Medicine, Ultrasound or Radiation Therapy. Upon completion of this program, students will be qualified to sit for the national MRI Certification examination offered by the American Registry of Radiologic Technologists (ARRT). Students are required to satisfactorily complete the course of study with a C or better in each required course.

The MRI Technologist Training Program is three terms in length (9 consecutive months). The program combines campus instruction with clinical education at affiliated hospitals. Applicants must be a Registered Radiologic Technologist ARRT(R), Registered Nuclear Medicine Technologist ARRT(N) or (CNMT), Registered Radiation Therapy Technologist ARRT(T) or Registered Medical Sonographer (RDMS) in good standing with one-year experience preferred. Technologists with less than one year experience may be admitted with Director permission. Refer to College catalog for program curriculum.

Medical Imaging Continuing Education Courses

College credit courses are available to A.R.R.T certified technologists for updating and re-entry knowledge and skills. See the Medical Imaging...
Degrees and Certificates Offered

Associate of Applied Science Degree

Radiography

Less than One-Year Certificate

Computed Tomography

Magnetic Resonance Imaging

Admission Prerequisites

Academic Prerequisites

Radiography

• All program applicants must have a high school diploma or a GED certificate. In addition, all applicants will be required to have satisfactorily completed (minimum letter grade "C") WR 121, MTH 111, BI 231, BI 232 and BI 233, MP 111 or the equivalent. Pass/No Pass grade is not acceptable in prerequisites.

• 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.

• The Radiography Program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission.

• All students must be formally admitted in order to enroll in the radiography courses. Other enrollees must have program permission.

• For information on specific application procedures and deadlines, please contact the Health Admissions Office at 971-722-4795 or visit the website www.pcc.edu/hao.

Computed Tomography 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.

• All students must be formally admitted in order to enroll in the Computed Tomography courses.

• For information on specific application procedures and deadlines, please contact the Health Admissions Office at 971-722-4795 or visit the website www.pcc.edu/hao.

Magnetic Resonance Imaging Technologist Training Program

• Applicants must be a Registered Radiologic Technologist ARRT(R), Registered Nuclear Medicine Technologist ARRT(N) or (CNMT), Registered Radiation Therapy Technologist ARRT(T) or Registered Medical Sonographer (RDMS) in good standing with one-year experience preferred. Technologists with less than one year experience may be admitted with Director permission.

• The MRI Technologist training program is a limited entry program with restricted enrollment. Completing admission requirements and applying to the program does not guarantee admission.

• All students must be formally admitted in order to enroll in the MRI courses.

• For information on specific application procedures and deadlines, please contact the Health Admissions Office at 971-722-4795 or visit the website www.pcc.edu/hao.

Other Prerequisites

Radiography:

• The Radiography Program does not require a computer science prerequisite; however, success in a Radiography Program requires that students be computer literate, including, at least, word processing, use of spreadsheets and web searches. Students with no computer experience should discuss with an advisor ways to achieve competency prior to entering the Radiography Program.

• 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.

• 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.

Computed Tomography Technologist Training Program:

• 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.

Magnetic Resonance Imaging Technologist Training Program:

• 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.

Program Requirements

Academic Requirements

Radiography:

• Students in the Radiology AAS program must complete all RAD courses with a letter grade of "C" or better. RAD 216 is exempt from the grade expectation as it is offered for Pass/No Pass only.

Computed Tomography Technologist Training Program:

• Students in the Computed Tomography Certificate program must complete all CTT courses with a letter grade of "C" or better.

Magnetic Resonance Imaging Technologist Training Program:
• Students in the Magnetic Resonance Imaging Certificate program must complete all MRI courses with a letter grade of "C" or better.

Other Requirements

• None

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 58/65 competency (p. 13). 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>Summer Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD 100 Introduction to Radiology</td>
<td>2</td>
</tr>
<tr>
<td>First Term</td>
<td></td>
</tr>
<tr>
<td>RAD 101 Radiographic Positioning I</td>
<td>3</td>
</tr>
<tr>
<td>RAD 105 Methods of Patient Care</td>
<td>3</td>
</tr>
<tr>
<td>RAD 106 Radiographic Equipment I</td>
<td>4</td>
</tr>
<tr>
<td>RAD 110 Radiographic Clinic I</td>
<td>4</td>
</tr>
<tr>
<td>HE 110 CPR/AED for Professional Rescuers and Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>RAD 102 Radiographic Positioning II</td>
<td>3</td>
</tr>
<tr>
<td>RAD 107 Radiographic Equipment II</td>
<td>4</td>
</tr>
<tr>
<td>RAD 115 Principles of Exposure I</td>
<td>3</td>
</tr>
<tr>
<td>RAD 120 Radiographic Clinic II</td>
<td>4.5</td>
</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>RAD 103 Radiographic Positioning III</td>
<td>3</td>
</tr>
<tr>
<td>RAD 122 Radiation Protection - Biology</td>
<td>3</td>
</tr>
<tr>
<td>RAD 130 Radiographic Clinic III</td>
<td>4.5</td>
</tr>
<tr>
<td>RAD 132 Radiographic Image Production</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Fourth Term</td>
<td></td>
</tr>
<tr>
<td>RAD 140 Radiographic Clinic IV</td>
<td>10</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Fifth Term</td>
<td></td>
</tr>
<tr>
<td>RAD 203 Applied Radiography Topics</td>
<td>2</td>
</tr>
<tr>
<td>RAD 209 Advanced Radiological Procedures</td>
<td>2</td>
</tr>
<tr>
<td>RAD 210 Radiographic Clinic V</td>
<td>6.5</td>
</tr>
<tr>
<td>RAD 215 Principles of Exposure II</td>
<td>3</td>
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<td>General Education</td>
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</tr>
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<td>Sixth Term</td>
<td></td>
</tr>
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<td>RAD 205 Radiographic Positioning V</td>
<td>3</td>
</tr>
<tr>
<td>RAD 211 Advanced Imaging Modalities</td>
<td>4</td>
</tr>
<tr>
<td>RAD 220 Radiographic Clinic VI</td>
<td>6.5</td>
</tr>
<tr>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Seventh Term</td>
<td></td>
</tr>
<tr>
<td>RAD 206 Survey of Medical Imaging Diseases</td>
<td>3</td>
</tr>
<tr>
<td>RAD 230 Radiographic Clinic VII</td>
<td>9</td>
</tr>
</tbody>
</table>

Eighth Term

| RAD 240 Radiographic Clinic VIII | 7 |
| RAD 216 Radiography Registry Review | 2 |

Total Credits: 119

Less than One-Year Certificate

Computed Tomography (p. 145)
Magnetic Resonance Imaging (p. 145)

Computed Tomography Less Than One-Year Certificate

Minimum 19 credits. Students must meet all certificate requirements.

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>CTT 101 Cross-Sectional Anatomy-Abdomen &amp; Pelvis</td>
<td>1</td>
</tr>
<tr>
<td>CTT 102 Cross-Sectional Anatomy-Head &amp; Spine</td>
<td>1</td>
</tr>
<tr>
<td>CTT 111 CT Physics, Equipment and Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>CTT 103 Cross-Sectional Anatomy - Neck &amp; Thorax</td>
<td>1</td>
</tr>
<tr>
<td>CTT 104 Cross Sectional Anatomy Review</td>
<td>1</td>
</tr>
<tr>
<td>CTT 112 CT Procedures, Protocols and Pathology Correlation</td>
<td>2</td>
</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>CTT 271 CT Clinical Education I</td>
<td>5</td>
</tr>
<tr>
<td>Fourth Term</td>
<td></td>
</tr>
<tr>
<td>CTT 113 CT Registry Review</td>
<td>1</td>
</tr>
<tr>
<td>CTT 272 CT Clinical II</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Credits: 19

Magnetic Resonance Imaging Less Than One-Year Certificate

Minimum 32 credits. Students must meet all certificate requirements.

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>MRI 101 MRI Physics I - Principles, Equipment &amp; Safety</td>
<td>2</td>
</tr>
<tr>
<td>MRI 111 MRI Cross-Sectional Anatomy I</td>
<td>2</td>
</tr>
<tr>
<td>MRI 271 MRI Clinical I</td>
<td>6</td>
</tr>
<tr>
<td>Second Term</td>
<td></td>
</tr>
<tr>
<td>MRI 102 MRI Physics II - Advanced Principles</td>
<td>2</td>
</tr>
<tr>
<td>MRI 112 MRI Cross-Sectional Anatomy II</td>
<td>1</td>
</tr>
<tr>
<td>MRI 272 MRI Clinical II</td>
<td>8</td>
</tr>
<tr>
<td>Third Term</td>
<td></td>
</tr>
<tr>
<td>MRI 130 MRI Imaging Procedures and Diagnosis</td>
<td>2</td>
</tr>
</tbody>
</table>
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.

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 Adventist Medical Center, Kaiser Permanente, Legacy Health System, Oregon Health and Sciences University, Providence Health System and Willamette Valley Medical Center.

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. Applications are accepted once a year for fall entry. The MLT program is competitive and applications are evaluated on a point system. Eligibility for entry into the program is based on successful completion of college courses in biology, chemistry, writing, mathematics and an introductory MLT course. It is strongly recommended that applicants have strong oral communication skills as well. Contact Allied Health Admissions for information on eligibility.

Students in the MLT Program must successfully complete all coursework with a C or better in order to progress in the program. Upon graduation, students are eligible to sit for a national exam to become a certified medical laboratory technician.

The Medical Laboratory Technology Program is accredited by: National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) 5600 N. River Rd., Suite 720 Rosemont, IL 60018 773-714-8880

Degrees and Certificates Offered

Associate of Applied Science Degree
Medical Laboratory Technology

1. Completion of WR 121, equivalent or higher with a C grade or better.
2. Completion of MTH 95, equivalent or higher with a C grade or better.
3. Completion within the last 7 years of a Biology series (BI 121/122 or BI 231/232/233 or BI 2122/212/213 or equivalent or higher) with C grades or better.
4. Completion within the last 7 years of a Chemistry series (CH 104/105/106 or CH 221/222/223 or equivalent or higher) with C grades or better.
5. Completion within the last 2 years of MLT 110 or equivalent with a C grade or better.

Students are required to have a health assessment completed by a health provider to confirm health status and ability to perform essential functions required from an MLT. In addition, students are required to complete immunization requirements, pass a criminal background check and a 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. 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 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.

MLT 110: Introduction to Medical Laboratory Technology is open for all students to enroll. All other MLT courses requires students to be admitted into the Medical Laboratory Technology Program through the formal application process.

Medical Laboratory 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. 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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

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.

<table>
<thead>
<tr>
<th>First Term</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLT 105</td>
<td>Phlebotomy for Medical Laboratory Technicians</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### Medical Professions (MP)

Cascade Campus  
Technology and Education Building (TEB), Room 103  
971-722-5667

### Career and Program Description

Healthcare occupations are projected to grow faster than any other career field in order to meet the medical needs of an aging population. The Healthcare Careers 14 credit, Less than One-Year Certificate prepares students with the foundational skills required by employers for entry-level positions in the healthcare industry. In addition, it prepares students to continue their education in allied health by introducing students to the breadth of career opportunities available in the healthcare industry.

Students will examine the soft skills, technical expertise, credentials, and career paths available. Completers will understand what is required to become a healthcare professional, complete first aid and CPR for the health professional, and understand basic medical terminology, electronic health records, and health law and ethics. Students will develop both the customer service skills required in the industry, and well as the technical knowledge. They will be prepared to go into entry-level positions such as Patient Access Specialist, Patient Relations Representative, Medical Office Assistant, Sterile Processing Technician, Dietary Aid, and other entry-level administrative positions in the field.

#### Degrees and Certificates Offered

**Less than One-Year Certificate**

**Healthcare Careers**

#### Admission Prerequisites

**Academic Prerequisites**

- None

**Other Prerequisites**

- None

#### Program Requirements

**Academic Requirements**

- None

**Other Requirements**

- None

**Healthcare Careers Less than One-Year Certificate**

Minimum 14 credits. Students must meet all certificate requirements.

- **HE 113** First Aid&CPR/AED Professional Rescuers/HealthCare Providers  
- **MP 108** Healthcare Career Essentials  
- **MP 111** Medical Terminology  
- **MP 140** Introduction to Health Law and Ethics  
- **MP 150** Introduction to Electronic Health Records

**Total Credits:** 14

**Microelectronics Technology**

Rock Creek Campus  
Science and Technology Division Office  
Building 7, Room 202  
971-722-7255

### 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, Qorvo, 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

Admission Prerequisites

Academic Prerequisites

- 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 writing 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 Microelectronics Technology AAS degrees must be working towards MTH 95 and WR 121.
- 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.

Other Prerequisites

- New students are encouraged to meet with a department representative for advising prior to signing up for classes.

Program Requirements

Academic Requirements

- None

Other Requirements

- None

Associate of Applied Science Degree

Microelectronics Technology (p. 148)
Microelectronics Technology: Solar Voltaic Manufacturing Technology Option (p. 149)
Microelectronics Technology: Automated Manufacturing Technology Option (p. 149)

Microelectronics 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 math course(s) required in the program of study. Students should consult with program advisors for academic planning.

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>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 104* or CH 221</td>
<td>5</td>
</tr>
<tr>
<td>General Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>MT 101</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Semiconductor Manufacturing</td>
<td>1</td>
</tr>
<tr>
<td>MT 102</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Semiconductor Devices</td>
<td>4</td>
</tr>
<tr>
<td>MT 111</td>
<td>4</td>
</tr>
<tr>
<td>Electronic Circuits &amp; Devices I</td>
<td>3</td>
</tr>
<tr>
<td>WR 121</td>
<td>3</td>
</tr>
<tr>
<td>English Composition</td>
<td>3</td>
</tr>
<tr>
<td>General Education (Social Science)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 105* or CH 222</td>
<td>5</td>
</tr>
<tr>
<td>Allied Health Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>MT 112</td>
<td>4</td>
</tr>
<tr>
<td>Electronic Circuits &amp; Devices II</td>
<td>3</td>
</tr>
<tr>
<td>MT 121</td>
<td>3</td>
</tr>
<tr>
<td>Digital Systems I</td>
<td>3</td>
</tr>
</tbody>
</table>
Solar Voltaic Manufacturing Technology
AAS Degree

Minimum 91 credits. Students must also meet Associate Degree
Comprehensive Requirements and Associate of Applied Science
Requirements. Students must complete a total of sixteen credits of
General Education. Some courses specified within the program may
be used as General Education. 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.

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 Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 101</td>
<td>Introduction to Semiconductor</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
<td></td>
</tr>
<tr>
<td>MT 102</td>
<td>Introduction to Semiconductor Devices</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MT 104</td>
<td>Introduction to Solar Voltaic Processing</td>
<td>1</td>
</tr>
<tr>
<td>MT 109</td>
<td>Intro to Electronics and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>General Education (Social Science)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MT 108</td>
<td>Statistics for Process Control</td>
</tr>
<tr>
<td>4</td>
<td>CH 100 (or higher)</td>
<td>Everyday Chemistry with Lab</td>
</tr>
<tr>
<td>3</td>
<td>MT 111</td>
<td>Electronic Circuits &amp; Devices I</td>
</tr>
<tr>
<td>3</td>
<td>MT 121</td>
<td>Digital Systems I</td>
</tr>
<tr>
<td>4</td>
<td>WR 227</td>
<td>Technical and Professional Writing 1</td>
</tr>
<tr>
<td>4</td>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
</tr>
<tr>
<td>4</td>
<td>MT 112</td>
<td>Electronic Circuits &amp; Devices II</td>
</tr>
<tr>
<td>3</td>
<td>MT 122</td>
<td>Digital Systems II</td>
</tr>
<tr>
<td>4</td>
<td>MT 131</td>
<td>Introduction to Programmable Logic Controllers</td>
</tr>
<tr>
<td>4</td>
<td>MTH 111 (or higher)</td>
<td>College Algebra</td>
</tr>
<tr>
<td>3</td>
<td>MT 113</td>
<td>Electronic Circuits &amp; Devices III</td>
</tr>
<tr>
<td>3</td>
<td>MT 122</td>
<td>Digital Systems II</td>
</tr>
<tr>
<td>4</td>
<td>Community Education</td>
<td>General Physics (Calculus)</td>
</tr>
<tr>
<td>5</td>
<td>CH 100, COMM 215, MTH 111, MTH 243, PHY 201, PHY 202, PHY 203, PHY 211, and PHY 213 could be used as General Education.</td>
<td>5</td>
</tr>
</tbody>
</table>
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.

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 Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Term</td>
<td>MT 101</td>
<td>Introduction to Semiconductor Manufacturing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MT 102</td>
<td>Introduction to Semiconductor Devices</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MT 104</td>
<td>Introduction to Solar Voltaic Processing</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 111</td>
<td>Electronic Circuits &amp; Devices I</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MTH 111 (or higher)</td>
<td>College Algebra</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>Second Term</td>
<td>CS 161</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 112</td>
<td>Electronic Circuits &amp; Devices II</td>
<td>3</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>Third Term</td>
<td>CS 162</td>
<td>Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td></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>4</td>
</tr>
<tr>
<td></td>
<td>MT 113</td>
<td>Electronic Circuits &amp; Devices III</td>
<td>3</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>4</td>
</tr>
<tr>
<td></td>
<td>or ELT 125</td>
<td>Basic Programmable Controllers</td>
<td>4</td>
</tr>
<tr>
<td>Fourth Term</td>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CIS 278</td>
<td>Data Communication Concepts II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 180</td>
<td>High Tech Employment Strategies</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 224</td>
<td>Process Equipment I</td>
<td>1</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>4</td>
</tr>
<tr>
<td>Fifth Term</td>
<td>COMM 215</td>
<td>Small Group Communication: Process and Theory</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 227</td>
<td>Process Equipment II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Automation Elective (PLC track)¹</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Sixth Term</td>
<td>MT 222</td>
<td>Quality Control Methods in Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 228</td>
<td>Process Equipment III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Automation Elective (PLC track ONLY)¹</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Automation Elective (Microcomputer track ONLY)¹</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Autonomy Electives

Microcomputer Track

- CIS 145 Microcomputer Hardware and Troubleshooting
- or EET 178 Computing Environments for Technicians

PLC Track

- ELT 126 Intermediate Programmable Controllers (PC Based)
- ELT 225 Advanced Programmable Controllers, PC Based

Solar Voltaic Manufacturing Technology: Career Pathway Certificate

Minimum 14 credits. Students must meet all 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>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CH 100</td>
<td>Everyday Chemistry with Lab (or higher)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MT 101</td>
<td>Introduction to Semiconductor Manufacturing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MT 102</td>
<td>Introduction to Semiconductor Devices</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MT 104</td>
<td>Introduction to Solar Voltaic Processing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MT 109</td>
<td>Intro to Electronics and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or MT 111</td>
<td>Electronic Circuits &amp; Devices I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 121</td>
<td>Digital Systems I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MT 180</td>
<td>High Tech Employment Strategies</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Credits: 14

Multimedia

Cascade Campus

Moriarty Arts and Humanities Building (MAHB), Room 218
971-722-5398 or 971-722-5201

http://www.pcc.edu/multimedia/

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
Video Production

Admission Prerequisites
Academic Prerequisites

• 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.

Other Prerequisites

• None

Program Requirements
Academic Requirements

• All courses for the Multimedia AAS and Certificate and the Video Production AAS and Certificate must be completed for a grade of "C" or "P" or better.

Other Requirements

• None

Associates of Applied Science Degree
Multimedia (p. 151)
Video Production (p. 152)

Multimedia 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. 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.

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 Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 160</td>
<td>Exploring Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>or CS 140U</td>
<td>Introduction to UNIX</td>
<td></td>
</tr>
<tr>
<td>or CS 133G</td>
<td>Introduction to Computer Games</td>
<td></td>
</tr>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</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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Second Term

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<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MM 150</td>
<td>Multimedia Project Review, Testing and Delivery</td>
<td>1</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
</tr>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
<td>4</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
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<tr>
<td>Multimedia Program Electives</td>
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Third Term

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<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 103</td>
<td>Understanding New Media Arts</td>
<td>4</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
<td>4</td>
</tr>
<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
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<tr>
<td>MM 232</td>
<td>Multimedia 3D Modeling and Animation</td>
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Fourth Term

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<th>Course Name</th>
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<tbody>
<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
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<tr>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
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<td>or COMM 11</td>
<td>Public Speaking</td>
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<td>or COMM 11</td>
<td>Persuasive Speaking</td>
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<td>or COMM 21</td>
<td>Interpersonal Communication: Process and Theory</td>
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<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
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<tr>
<td>or MM 259</td>
<td>Screenwriting/Preproduction</td>
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Fifth Term

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<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tr>
<td>ART 115</td>
<td>Basic Design - 2D Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 131A</td>
<td>Drawing I</td>
<td>3</td>
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<td>Multimedia Program Electives</td>
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Sixth Term

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<th>Credits</th>
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<tbody>
<tr>
<td>ART 116</td>
<td>Basic Design - Color Foundations</td>
<td>3</td>
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<tr>
<td>WR 122</td>
<td>English Composition</td>
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Seventh Term

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<tbody>
<tr>
<td>ART 117</td>
<td>Basic Design - 3D Foundations</td>
<td>3</td>
</tr>
<tr>
<td>MTH 105</td>
<td>Math in Society</td>
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<tr>
<td>General Education</td>
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</table>

Eighth Term
Multimedia

MM 250  Advanced Multimedia Project Development I  3

Total Credits: 98

* Could be used as General Education

Multimedia Program Electives (p. 152)

Video Production 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 course planning.

Video Production Degree Courses

BA 205  Business Communication Using Technology  4
BA 223  Principles of Marketing  3
  or BA 250  Small Business Management  2
MM 160  Marketing Yourself as a Multimedia Professional  4
MM 230  Graphics for Multimedia  3
MM 235  Digital Video Editing and Production  4
MM 236  Video Compression and Streaming on the Internet  3
MM 237  Video Compositing and Effects  4
MM 239  Digital Video Edit/Post Production II  2
MM 246  Post-Production Sound for Video  2
  or MM 247  Field Sound for Video  3
MM 250  Advanced Multimedia Project Development I  4
MM 258  Video Compositing and Editing II  4
MM 259  Screenwriting/Preproduction  4
MM 260  Video Production I  4
MM 261  Video Production II  4
MM 262  Video Production III  4
MM 280  Cooperative Work Experience in Multimedia  6
MTH 105  Math in Society  4

Art Electives

Film Studies Electives

Multimedia Program Electives  12
General Education  8

Total Credits 94

* Could be used as General Education

Art Electives

ART 103  Understanding New Media Arts  4
ART 116  Basic Design - Color Foundations  3
ART 140A  Digital Photography I  3

Film Studies Electives

ENG 195  Film Studies: Film as Art  4
ENG 196  Film Studies: Directors  4

Multimedia Program Electives

MM 110  Introduction to Multimedia  1
MM 120  Multimedia Design  2
MM 130  Multimedia Graphic Video and Audio Production  3
MM 140  Multimedia Authoring I  3
MM 141  Incorporating Multimedia Elements in Presentation Software  2
MM 142  Introduction to Augmented Reality  1
MM 146  Directing Actors for Recording  4
MM 150  Multimedia Project Review, Testing and Delivery  1
MM 160  Marketing Yourself as a Multimedia Professional  2
MM 210  Audio Technician I – Intro  4
MM 211  Audio Technician II - Multitrack/Post  4
MM 212  Audio Technician III - Project Management  4
MM 213  Audio Technician IV - Capstone Project  4
MM 220  Multimedia Design II  3
MM 221  Game Level Design  3
MM 222  Game Art Pipeline  3
MM 225  Vector Graphics & Animation for the World Wide Web  3
MM 231  Multimedia 3D Modeling and Animation  3
MM 232  3D Character Modeling and Animation  3
MM 233  3D for Interactivity  3
MM 234  Video Compression and Streaming on the Internet  3
MM 237  Video Compositing and Effects  4
MM 238  Creating Professional DVD-Video  4
MM 239  Digital Video Edit/Post Production II  4
MM 240  Multimedia Authoring II-Scripting  4
MM 241  Multimedia Authoring III - Scripting  4
MM 242  Creating Interactive Web Pages  3
MM 243  Internet Delivery Methods  3
MM 244  Post-Production Sound for Video  2
MM 245  Field Sound for Video  2
MM 246  Advanced Multimedia Project Development II  3
MM 247  Advanced Multimedia Project Development III  3
MM 248  Intermediate Modeling and Texturing  3
MM 249  Character Rigging and Animation  3
MM 250  3D Lighting and Texturing  3
MM 251  Graphics for Multimedia II  4
MM 252  Video Compositing and Editing II  4
MM 253  Screenwriting/Preproduction  4
MM 254  Video Production I  4
MM 255  Video Production II  4
MM 256  Video Production III  4
MM 257  Cinematography/Lighting  3
MM 258  Broadcast I  4
### Multimedia One-Year Certificate

Minimum 60 credits. Students must meet all certificate requirements.

### Course of Study

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

#### First Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>CAS 111D</td>
<td>Beginning Website Creation: Dreamweaver or CAS 206 Principles of HTML and CSS</td>
<td>3</td>
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</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 150</td>
<td>Multimedia Project Review, Testing and Delivery</td>
<td>1</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
</tr>
<tr>
<td>MM 161</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
</tr>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
<td>4</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
<td>4</td>
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#### Third Term

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MM 250</td>
<td>Advanced Multimedia Project Development I</td>
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#### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>MM 250</td>
<td>Advanced Multimedia Project Development I</td>
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</table>

#### Multimedia Program Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>MM 141</td>
<td>Incorporating Multimedia Elements in Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>MM 142</td>
<td>Introduction to Augmented Reality</td>
<td>1</td>
</tr>
<tr>
<td>MM 146</td>
<td>Directing Actors for Recording</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Multimedia Support Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 126</td>
<td>Introduction to AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 127</td>
<td>Introduction to Google SketchUp</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 136</td>
<td>Intermediate AutoCAD</td>
<td>3</td>
</tr>
<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 117</td>
<td>Basic Design - 3D Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ART 119</td>
<td>Basic Design-4D Foundations</td>
<td>3</td>
</tr>
</tbody>
</table>

| MM 150      | Multimedia Project Review, Testing and Delivery                              | 1       |
| MM 210      | Audio Technician I – Intro                                                   | 4       |
| MM 211      | Audio Technician II - Multitrack/Post                                        | 4       |
| MM 212      | Audio Technician III - Project Management                                    | 4       |
| MM 213      | Audio Technician IV - Capstone Project                                       | 4       |
| MM 220      | Multimedia Design II                                                         | 3       |
| MM 221      | Game Level Design                                                            | 3       |
| MM 225      | Game Art Pipeline                                                            | 3       |
| MM 231      | Vector Graphics & Animation for the World Wide Web                           | 3       |
| MM 232      | Multimedia 3D Modeling and Animation                                         | 3       |
| MM 233      | 3D Character Modeling and Animation                                          | 3       |
| MM 234      | 3D for Interactivity                                                         | 3       |
| MM 236      | Video Compression and Streaming on the Internet                              | 3       |
| MM 237      | Video Compositing and Effects                                                | 4       |
| MM 238      | Creating Professional DVD-Video                                              | 4       |
| MM 239      | Digital Video Edit/Post Production II                                        | 4       |
| MM 240      | Multimedia Authoring II-Scripting                                            | 4       |
| MM 241      | Multimedia Authoring III - Scripting                                         | 4       |
| MM 244      | Creating Interactive Web Pages                                               | 3       |
| MM 245      | Internet Delivery Methods                                                    | 3       |
| MM 246      | Post-Production Sound for Video                                              | 2       |
| MM 247      | Field Sound for Video                                                        | 2       |
| MM 250      | Advanced Multimedia Project Development II                                   | 3       |
| MM 251      | Advanced Multimedia Project Development III                                  | 3       |
| MM 252      | Intermediate Modeling and Texturing                                          | 3       |
| MM 253      | Character Rigging and Animation                                              | 3       |
| MM 254      | 3D Lighting and Texturing                                                    | 3       |
| MM 255      | Graphics for Multimedia                                                      | 4       |
| MM 256      | Video Compositing and Editing II                                             | 4       |
| MM 257      | Screenwriting/Preproduction                                                  | 4       |
| MM 258      | Video Production I                                                           | 4       |
| MM 259      | Video Production II                                                          | 4       |
| MM 260      | Video Production II                                                          | 4       |
| MM 261      | Video Production II                                                          | 4       |
| MM 262      | Video Production III                                                         | 4       |
| MM 263      | Cinematography/Lighting                                                      | 3       |
| MM 264      | Broadcast I                                                                   | 4       |
| MM 265      | Broadcast II                                                                  | 4       |
| MM 267      | Special Effects I - Green Screen                                             | 4       |
| MM 270      | Writing for Multimedia                                                       | 3       |
| MM 280      | Cooperative Work Experience in Multimedia                                    | 1-3     |

Total Credits: 60
Video Production One-Year Certificate

Minimum 47 credits. Students must meet all certificate requirements.

Video Production Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
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<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
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<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
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<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
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<tr>
<td>MM 235</td>
<td>Advanced Visual Basic.NET Programming</td>
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<tr>
<td>MM 234J</td>
<td>Java Programming III</td>
<td>4</td>
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<td>MM 234B</td>
<td>Java Programming II</td>
<td>4</td>
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<tr>
<td>MM 235W</td>
<td>Introduction to Web Analytics</td>
<td>4</td>
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<tr>
<td>MM 133G</td>
<td>Introduction to Computer Games</td>
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<td>MM 140U</td>
<td>Introduction to UNIX</td>
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<td>MM 233G</td>
<td>Game Programming</td>
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<tr>
<td>ED 103</td>
<td>Desktop Publishing for Educators</td>
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<td>ED 104</td>
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<td>ED 171</td>
<td>Computers in Education II</td>
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<td>ENG 195</td>
<td>Film Studies: Film as Art</td>
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<td>ENG 196</td>
<td>Film Studies: Directors</td>
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<td>ENG 197</td>
<td>Film Studies: Contemporary Themes and Genres</td>
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<td>Graphic Design I</td>
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<td>Graphic Design 5</td>
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<td>GD 228</td>
<td>Professional Graphic Design Practices</td>
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<td>GD 229</td>
<td>Portfolio Preparation</td>
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<td>GD 242</td>
<td>Combined Graphic Programs</td>
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<td>GD 249</td>
<td>Design Studio</td>
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<td>Electronic Media II</td>
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<td>Introduction to Recording Technologies</td>
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<td>Studio Recording Technology I</td>
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<td>MUC 226</td>
<td>Studio Recording IV</td>
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<td>MUC 227</td>
<td>Studio Recording V</td>
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<tr>
<td>MUC 228</td>
<td>Studio Recording VI</td>
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<td>WR 227</td>
<td>Technical and Professional Writing I</td>
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<td>WR 243</td>
<td>Creative Writing - Script Writing</td>
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<tr>
<td>WR 247</td>
<td>Advanced Creative Writing - Scriptwriting</td>
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<td>WR 9599</td>
<td>Professional Editing</td>
<td>3</td>
</tr>
<tr>
<td>WR 9600</td>
<td>Technical and Professional Writing II</td>
<td>3</td>
</tr>
<tr>
<td>WR 9601</td>
<td>Graphics for Technical and Professional Writers</td>
<td>3</td>
</tr>
</tbody>
</table>

Multimedia

Introduction to Visual Basic.NET Programming

Intermediate Visual Basic.NET Programming

Java Programming I

Mobile Application Programming for Android

Applied Internet Concepts

Multimedia Design

Multimedia Graphic Video and Audio Production

Marketing Yourself as a Multimedia Professional

Graphics for Multimedia
MM 255  Video Production III
MM 254  Video Production II
MM 253  Video Production I
Video Production Certificate Electives  13

Total Credits  47

Video Production Certificate Electives

MM 280  Cooperative Work Experience in Multimedia
MM 270  Writing for Multimedia
MM 267  Special Effects I - Green Screen
MM 260  Broadcast II
MM 259  Screenwriting/Preproduction
MM 258  Video Compositing and Editing II
MM 257  Advanced Multimedia Project Development III
MM 256  Video Production II
MM 255  Video Production I
MM 254  Video Production

Music

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

Moriarty Arts and Humanities Building (MAHB), Room 210
971-722-4264 or 971-722-4759

www.pcc.edu/programs/music

Description

Music is a universal art form practiced and appreciated by every culture of the world. From live music performance as a soloist, ensemble member or accompanist, to working as a studio musician, from composing or arranging music, to teaching music, musicians fulfill a critical, dynamic and often collaborative role within the arts. Formal music education includes the study of music theory, music history and literature, performance practice, music technology, and music pedagogy.

The PCC music program offers courses that cater to both musicians and non-musicians alike. We offer a variety of introductory courses while also preparing those who wish to transfer to a four-year music program. With proper music study and training, students may become professional performers, conductors, composers, music theorists, music historians, or music educators.

Music and Sonic Arts

Cascade Campus
971-722-5226 or 971-722-5430

www.pcc.edu/musicandsonicarts

Career and Program Description

The Music and Sonic Art’s program at PCC’s Cascade Campus seeks students interested in contemporary, commercial music and students excited to explore the limits of what is technologically and artistically possible through the creation of new sounds, new instruments, and new methods of performance and composition.

In an environment that combines music, art, science, coding, and design, students develop tools that prepare them for leadership in artistic, technical, educational, entrepreneurial and research efforts.

In addition, students learn to value the contributions of people of diverse backgrounds and to imagine the important roles of music and technology.
in the advancement of equity and the creation of economically and culturally vibrant communities.

The Music and Sonic Art’s program is located at the Cascade Campus. PCC offers stackable degree options: a less than one-year Professional Music Certificate as well as a two-year AAS Degree in Professional Music.

Degrees and Certificates Offered
Associate of Applied Science Degree
Professional Music

Less Than One-Year Certificate
Professional Music

Admission Prerequisites
Academic Requirements
• The following professional music courses will be required of all program students. All sequential courses must be taken and passed in sequence.

Other Prerequisites
• None

Program Requirements
Academic Requirements
• None

Other Requirements
• None

Professional Music 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 58/65 competency (p. 13). 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.

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Total Credits: 90

* Could be used as General Education.

Professional Music Electives
MUC 145A Group Guitar/Bass I 2
MUC 145B Group Guitar/Bass II 2
MUC 145C Group Guitar/Bass III 2
MUC 155 Introduction to Improvisation 2
MUC 155A Improvisation I 2
MUC 155B Improvisation II 2
MUC 155C Improvisation III 2
MUC 165 Business for the Musician 1
MUC 166 Songwriting and Music Publishing 2
MUC 202A Ensemble I: Intro to Ensemble 2
MUC 202B Ensemble II: Jazz Ensemble 2
MUC 202C Ensemble III: Multimedia Ensemble 2
MUC 271 Audio Programming II: Intermediate Max/MSP 3
MUC 280A Cooperative Education: Vocational Music 1-3
MUS 111 Music Theory I (part one) 3
MUS 120A Music Theory I (part two) 3
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### Professional Music Ensemble Electives

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<td>Understanding the Visual Arts</td>
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<td>ART 103</td>
<td>Understanding New Media Arts</td>
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<td>ART 115</td>
<td>Basic Design - 2D Foundations</td>
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<td>ART 116</td>
<td>Basic Design - Color Foundations</td>
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<td>ART 248B</td>
<td>Glass Casting</td>
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<td>ART 248C</td>
<td>Glass Casting</td>
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<tr>
<td>ART 253A</td>
<td>Ceramics I</td>
<td>3</td>
</tr>
<tr>
<td>ART 253B</td>
<td>Ceramics I</td>
<td>3</td>
</tr>
<tr>
<td>ART 253C</td>
<td>Ceramics I</td>
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</tr>
<tr>
<td>ART 256A</td>
<td>Ceramics II</td>
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<tr>
<td>ART 256B</td>
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<tr>
<td>ART 256C</td>
<td>Ceramics II</td>
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<td>ART 270A</td>
<td>Printmaking I</td>
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<td>ART 270B</td>
<td>Printmaking I</td>
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<td>ART 270C</td>
<td>Printmaking I</td>
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<td>ART 277A</td>
<td>Life Painting</td>
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<tr>
<td>ART 277C</td>
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<tr>
<td>ART 279A</td>
<td>Experimental Media</td>
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</tr>
<tr>
<td>ART 279B</td>
<td>Experimental Media</td>
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</tr>
<tr>
<td>ART 279C</td>
<td>Experimental Media</td>
<td>3</td>
</tr>
<tr>
<td>ART 281A</td>
<td>Painting II</td>
<td>3</td>
</tr>
<tr>
<td>ART 281B</td>
<td>Painting II</td>
<td>3</td>
</tr>
<tr>
<td>ART 281C</td>
<td>Painting II</td>
<td>3</td>
</tr>
<tr>
<td>ART 284A</td>
<td>Water Media/Water Color I</td>
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<tr>
<td>ART 290A</td>
<td>Sculpture: Plaster/Clay</td>
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</tr>
<tr>
<td>ART 290B</td>
<td>Sculpture: Plaster/Clay</td>
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</tr>
<tr>
<td>ART 290C</td>
<td>Sculpture: Plaster/Clay</td>
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</tr>
<tr>
<td>ART 291A</td>
<td>Sculpture: Carving</td>
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</tr>
<tr>
<td>ART 291B</td>
<td>Sculpture: Carving</td>
<td>3</td>
</tr>
<tr>
<td>ART 291C</td>
<td>Sculpture: Carving</td>
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</tr>
<tr>
<td>ART 292A</td>
<td>Sculpture: Mixed Media</td>
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</tr>
<tr>
<td>ART 292B</td>
<td>Sculpture: Mixed Media</td>
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</tr>
<tr>
<td>ART 292C</td>
<td>Sculpture: Mixed Media</td>
<td>3</td>
</tr>
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<td>ART 293A</td>
<td>Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART 293B</td>
<td>Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART 293C</td>
<td>Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART 294A</td>
<td>Sculpture: Metals</td>
<td>3</td>
</tr>
<tr>
<td>ART 294B</td>
<td>Sculpture: Metals</td>
<td>3</td>
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<td>CIS 122</td>
<td>Introduction to Programming Logic</td>
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<td>CIS 133J</td>
<td>Java Programming I</td>
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<td>CIS 135M</td>
<td>Mobile Application Programming for Android</td>
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<td>CIS 135T</td>
<td>XML and HL7</td>
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</tr>
<tr>
<td>CIS 233J</td>
<td>Java Programming II</td>
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<td>CIS 233W</td>
<td>JavaScript for Web Developers</td>
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<tr>
<td>CIS 234J</td>
<td>Java Programming III</td>
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<td>CS 133U</td>
<td>C Programming</td>
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<tr>
<td>CS 233G</td>
<td>Game Programming</td>
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<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
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<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
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<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
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</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
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<tr>
<td>MM 142</td>
<td>Introduction to Augmented Reality</td>
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<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
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<tr>
<td>MM 232</td>
<td>Multimedia 3D Modeling and Animation</td>
<td>3</td>
</tr>
<tr>
<td>MM 233</td>
<td>3D Character Modeling and Animation</td>
<td>3</td>
</tr>
<tr>
<td>MM 234</td>
<td>3D for Interactivity</td>
<td>3</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
<td>4</td>
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<tr>
<td>MM 236</td>
<td>Video Compression and Streaming on the Internet</td>
<td>3</td>
</tr>
<tr>
<td>MM 237</td>
<td>Video Compositing and Effects</td>
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</tr>
<tr>
<td>MM 239</td>
<td>Digital Video Edit/Post Production II</td>
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<tr>
<td>MM 246</td>
<td>Post-Production Sound for Video</td>
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</tr>
<tr>
<td>MM 247</td>
<td>Field Sound for Video</td>
<td>2</td>
</tr>
<tr>
<td>MM 253</td>
<td>Intermediate Modeling and Texturing</td>
<td>3</td>
</tr>
<tr>
<td>MM 254</td>
<td>Character Rigging and Animation</td>
<td>3</td>
</tr>
<tr>
<td>MM 258</td>
<td>Video Compositing and Editing II</td>
<td>4</td>
</tr>
<tr>
<td>MM 260</td>
<td>Video Production I</td>
<td>4</td>
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<tr>
<td>MM 261</td>
<td>Video Production II</td>
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<tr>
<td>MM 262</td>
<td>Video Production III</td>
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<tr>
<td>MUC 226</td>
<td>Studio Recording IV</td>
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<td>MUC 227</td>
<td>Studio Recording V</td>
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<tr>
<td>MUC 228</td>
<td>Studio Recording VI</td>
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</tr>
<tr>
<td>TA 101</td>
<td>Theatre Appreciation</td>
<td>4</td>
</tr>
<tr>
<td>TA 111</td>
<td>Fundamentals of Technical Theatre</td>
<td>4</td>
</tr>
<tr>
<td>TA 112</td>
<td>Introduction to Set Design</td>
<td>4</td>
</tr>
<tr>
<td>TA 113</td>
<td>Introduction to Stage Lighting</td>
<td>4</td>
</tr>
<tr>
<td>TA 116</td>
<td>Stagecraft</td>
<td>3</td>
</tr>
<tr>
<td>TA 141</td>
<td>Fundamentals of Acting Techniques</td>
<td>4</td>
</tr>
<tr>
<td>TA 142</td>
<td>Fundamentals of Acting Techniques</td>
<td>4</td>
</tr>
<tr>
<td>TA 143</td>
<td>Fundamentals of Acting Techniques</td>
<td>4</td>
</tr>
<tr>
<td>TA 144</td>
<td>Improvisational Theatre</td>
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<tr>
<td>TA 145</td>
<td>Acting for the Camera</td>
<td>4</td>
</tr>
<tr>
<td>TA 147</td>
<td>Voice and Diction for the Theatre</td>
<td>3</td>
</tr>
<tr>
<td>TA 148</td>
<td>Movement for the Stage</td>
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<tr>
<td>TA 180A</td>
<td>Rehearsal &amp; Performance-Fall</td>
<td>1</td>
</tr>
<tr>
<td>TA 180B</td>
<td>Rehearsal &amp; Performance-Fall</td>
<td>2</td>
</tr>
<tr>
<td>TA 180C</td>
<td>Rehearsal &amp; Performance-Fall</td>
<td>3</td>
</tr>
<tr>
<td>TA 180D</td>
<td>Rehearsal &amp; Performance-Fall</td>
<td>4</td>
</tr>
<tr>
<td>TA 190A</td>
<td>Projects in Theatre</td>
<td>1</td>
</tr>
<tr>
<td>TA 190B</td>
<td>Projects in Theatre</td>
<td>2</td>
</tr>
</tbody>
</table>
Professional Music Less Than One-Year Certificate

Minimum 43 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.

<table>
<thead>
<tr>
<th>Summer Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Music Certificate Electives</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUC 101 Commercial Music Theory I</td>
<td>3</td>
</tr>
<tr>
<td>MUC 120A Sight Singing and Ear Training I</td>
<td>1</td>
</tr>
<tr>
<td>MUC 130A Rhythm Training I</td>
<td>1</td>
</tr>
<tr>
<td>MUC 140A Group Piano I</td>
<td>2</td>
</tr>
<tr>
<td>MUC 145A Group Guitar/Bass I</td>
<td>2</td>
</tr>
<tr>
<td>MUC 150A Keyboard Harmony I</td>
<td>1</td>
</tr>
<tr>
<td>MUC 165 Business for the Musician</td>
<td>1</td>
</tr>
<tr>
<td>MUS 205 Introduction to Jazz History</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUC 102 Commercial Music Theory II</td>
<td>3</td>
</tr>
<tr>
<td>MUC 120B Sight Singing and Ear Training II</td>
<td>1</td>
</tr>
<tr>
<td>MUC 130B Rhythm Training II</td>
<td>1</td>
</tr>
<tr>
<td>MUC 150B Keyboard Harmony II</td>
<td>2</td>
</tr>
<tr>
<td>MUC 234 Income Tax Preparation for Musicians</td>
<td>1</td>
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<tr>
<td>MUC 280A Cooperative Education: Vocational Music</td>
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<tr>
<td>MUS 206 Introduction to the History of Rock Music</td>
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</table>

<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MUC 103 Commercial Music Theory III</td>
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</tr>
<tr>
<td>MUC 120C Sight Singing and Ear Training III</td>
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</tr>
<tr>
<td>MUC 130C Rhythm Training III</td>
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</tr>
<tr>
<td>MUC 143 Group Percussion</td>
<td>2</td>
</tr>
<tr>
<td>MUC 150C Keyboard Harmony III</td>
<td>3</td>
</tr>
<tr>
<td>MUC 164 Survey of the Music Industry</td>
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</tr>
<tr>
<td>MUS 207 Introduction to the History of Folk Music</td>
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</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUC 123</td>
</tr>
<tr>
<td>MUC 124 Electronic Media II</td>
</tr>
<tr>
<td>MUC 125 Electronic Media III</td>
</tr>
<tr>
<td>MUC 126A Computer Notation and Scoring I</td>
</tr>
<tr>
<td>MUC 126B Computer Notation and Scoring II</td>
</tr>
<tr>
<td>MUC 140B Group Piano II</td>
</tr>
<tr>
<td>MUC 144 Contemporary Singing</td>
</tr>
<tr>
<td>MUC 144B Contemporary Singing II</td>
</tr>
<tr>
<td>MUC 145B Group Guitar/Bass II</td>
</tr>
<tr>
<td>MUC 145C Group Guitar/Bass III</td>
</tr>
<tr>
<td>MUC 154A Band Performance Workshop</td>
</tr>
<tr>
<td>MUC 154B Band Performance Workshop</td>
</tr>
<tr>
<td>MUC 154C Band Performance Workshop III</td>
</tr>
<tr>
<td>MUC 155 Introduction to Improvisation</td>
</tr>
<tr>
<td>MUC 155A Improvisation I</td>
</tr>
<tr>
<td>MUC 155B Improvisation II</td>
</tr>
<tr>
<td>MUC 155C Improvisation III</td>
</tr>
<tr>
<td>MUC 166 Songwriting and Music Publishing</td>
</tr>
<tr>
<td>MUC 167 The Music Business: Career Opportunities and Self Defense</td>
</tr>
<tr>
<td>MUC 222 Introduction to Recording Technologies</td>
</tr>
<tr>
<td>MUC 223 Studio Recording Technology I</td>
</tr>
<tr>
<td>MUC 224 Studio Recording Technology II</td>
</tr>
<tr>
<td>MUC 225 Studio Recording Technology III</td>
</tr>
<tr>
<td>MUC 226 Studio Recording IV</td>
</tr>
<tr>
<td>MUC 227 Studio Recording V</td>
</tr>
<tr>
<td>MUC 228 Studio Recording VI</td>
</tr>
<tr>
<td>MUS 108 Music Cultures of the World</td>
</tr>
<tr>
<td>MUS 110 Fundamentals of Music</td>
</tr>
</tbody>
</table>

Nursing
Sylvania Campus
Health Technology Building (HT), Room 120
971-722-4466
Health Admissions
971-722-4795
www.pcc.edu/nursing

Career and Program Description
Portland Community College is a member of the Oregon Consortium for Nursing Education (OCNE). This statewide consortium is composed of eight Community College Nursing Programs and Oregon Health Sciences University (OHSU) School of Nursing who have jointly developed the competency-based curriculum offered by all OCNE schools. The core competencies address the need for nurses skilled in clinical judgment and critical thinking; evidence-based practice; relationship-centered care; interdisciplinary collaboration; assisting individuals and families in self-care practices for promotion of health and management of chronic and acute illness; end-of-life care; and teaching, delegation, leadership and
supervision of caregivers. Acceptance into the PCC program allows for non-competitive admission to OHSU School of Nursing.

The OCNE curriculum is designed as a four-year course of study. The first year is devoted to pre-admissions requisites and/or pre-program courses (45 credits) required before starting the nursing program. The second and third year of study is comprised of six terms, allowing students to complete the Associate of Applied Science degree (AAS) and be eligible to take the NLCEX-RN licensing exam. Licensure is granted through the Oregon State Board of Nursing. After licensure, students can continue on in OHSU RN-BS nursing major program.

Applications are accepted once per year in the winter for fall entry. PCC’s nursing program is competitive and applications are evaluated on a point system. Minimum eligibility requirements must be met in order to apply. Contact the Health Admission Office for information and admission instructions.

PCC Nursing Program Approval
Oregon State Board of Nursing
17938 SW Upper Boones Ferry Rd
Portland OR 97224
971-673-0685

PCC Nursing Program Accreditation
Accreditation Commission for Education in Nursing (ACEN)
3343 Peachtree Rd Suite 850
Atlanta, Georgia 30326
Phone (404) 975-5000

Degrees and Certificates Offered
Associate of Applied Science Degree
Nursing

Admission Prerequisites
Academic Prerequisites

• 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.

Prerequisites Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
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<tr>
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<tr>
<td>BI 232</td>
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</tr>
<tr>
<td>BI 233</td>
<td>4</td>
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<tr>
<td>FN 225</td>
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</tr>
<tr>
<td>MTH 95</td>
<td>4</td>
</tr>
<tr>
<td>PSY 215</td>
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</tr>
<tr>
<td>WR 121</td>
<td>4</td>
</tr>
<tr>
<td>WR 122</td>
<td>4</td>
</tr>
</tbody>
</table>

Nursing Program Electives **

Minimum required prerequisite credits completed prior to enrolling in any nursing courses 3

** 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 30 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.

Other Prerequisites

• 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.

Program Requirements

Academic Requirements

• None

Other Requirements

• None

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 58/65 competency (p. 13). 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>BI 234*</td>
<td>5</td>
</tr>
<tr>
<td>NRS 110</td>
<td>9</td>
</tr>
</tbody>
</table>
## Degrees and Certificates Offered

### Two-Year Certificate
- **Occupational Skills Training**

### One-Year Certificate
- **Occupational Skills Training**

### Less than One-Year Certificate
- **Occupational Skills Training**

## Admission Prerequisites

### Academic Prerequisites
- **None**

### Other Prerequisites
- 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.
- 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.

## Program Requirements

### Academic Requirements
- **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.

### Other Requirements
- **None**

## Occupational Skills Training Certificates

Students must meet all certificate requirements.

- **Less Than One-Year Certificate**: Minimum of 36 and maximum of 44 credits of OST 101 are required. A maximum of 44 credits of Pass/No Pass grades may apply.
- **One Year Certificate**: Minimum of 45 and maximum of 60 credits of OST 101 are required. A maximum of 60 credits of Pass/No Pass grades may apply.
- **Two Year Certificate**: Minimum of 61 and maximum of 64 credits are required. A maximum of 64 credits of Pass/No Pass grades may apply.

There is no minimum GPA requirement for the OST certificate as OST 101 is only offered Pass/No Pass. A maximum of 24 credits of Occupational Skills credit may be applied to an Associate of General Studies Degree.

## Ophthalmic Medical Technology

Cascade Campus
Career and Program Description

Those training in the Ophthalmic Medical Technology Program develop skills to perform ophthalmic procedures under the supervision of a licensed physician. These procedures include: medical histories, diagnostic tests, refractometry, anatomical and functional ocular measurements and tests, administration of topical ophthalmic and oral medications, instructing patients, maintaining equipment, sterilizing surgical instruments, assisting in minor ophthalmic surgery and assisting in the fitting of contact lenses. Ophthalmic Medical Technology is a rapidly expanding field and a growing demand exists for technicians.

The Ophthalmic Program is a limited entry program with restricted enrollment. The program is limited to 24 students. Only those students who have been officially admitted to the Ophthalmic Medical Technology Program may enroll in OMT courses. Professionals in the field may be admitted when space is available.

The program begins fall term only. To advance to the next term students must successfully complete all of the previous term’s coursework by receiving a grade of Pass or C or better.

This program is designed to correlate classroom and laboratory experiences with clinical experience in ophthalmic offices and clinics and prepares students to function under the supervision of a licensed physician.

This program is accredited by the Commission on Accreditation for Ophthalmic Medical Programs (CoA-OMP). Students in the OMT program will test for national certification as an ophthalmic technician during term seven of the program.

Degrees and Certificates Offered

Associate of Applied Science Degree
Ophthalmic Medical Technology

Admission Prerequisites

Academic Prerequisites

• Completion of WR 121, MTH 65, BI 121, BI 122 and MP 111 with a “C” or “P” or better.
• This is a limited entry program. Complete application including two recommendation forms and unofficial transcripts from any colleges attended other than PCC.

Other Prerequisites

• Students must have working knowledge or background of basic computer skills including Windows, Internet and e-mail.
• Program advising session with an Cascade Allied Health Admissions Coordinator

Program Requirements

Academic Requirements

• Students may consult with faculty advisor about alternative approaches to completing portions of the Ophthalmic Medical Technology curricula.

Other Requirements

• 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.
• Students must have transportation to practicum facilities throughout the Portland metropolitan area.

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. 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 30 Pass/No Pass credits are allowed in the Ophthalmic Medical Technology AAS Degree. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). 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>MP 150</td>
<td>Introduction to Electronic Health Records</td>
</tr>
<tr>
<td>OMT 115</td>
<td>Introduction to Ophthalmics</td>
</tr>
<tr>
<td>OMT 145</td>
<td>Clinical Optics 1</td>
</tr>
<tr>
<td>OMT 163</td>
<td>Ocular Anatomy and Physiology</td>
</tr>
<tr>
<td>PSY 101</td>
<td>Psychology and Human Relations</td>
</tr>
</tbody>
</table>

General Education | 4

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE 113</td>
<td>First Aid&amp;CPR/AED Professional Rescuers/HealthCare Providers</td>
</tr>
<tr>
<td>MP 135</td>
<td>Pharmacology for Allied Health</td>
</tr>
<tr>
<td>OMT 102</td>
<td>Ocular Disease</td>
</tr>
<tr>
<td>OMT 104</td>
<td>Ophthalmic Office Procedures</td>
</tr>
<tr>
<td>OMT 146</td>
<td>Clinical Optics 2</td>
</tr>
</tbody>
</table>

General Education | 4

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 131</td>
<td>Introduction to Medical Science</td>
</tr>
<tr>
<td>OMT 103</td>
<td>Ocular Pharmacology</td>
</tr>
<tr>
<td>OMT 106</td>
<td>Introduction to Clinical Skills</td>
</tr>
<tr>
<td>OMT 121</td>
<td>Practicum I</td>
</tr>
<tr>
<td>OMT 147</td>
<td>Clinical Optics 3</td>
</tr>
<tr>
<td>OMT 231</td>
<td>Seminar I</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.

Fourth Term

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


OMT 122  Practicum II  
General Education

Fifth Term
OMT 206  Diagnostic Procedures I  
OMT 209  Surgical Assisting Procedures  
OMT 222  Practicum Second Year  
OMT 232  Seminar II

Sixth Term
OMT 207  Diagnostic Procedures II  
OMT 208  Ocular Motility  
OMT 222  Practicum Second Year  
OMT 232  Seminar II  
OMT 250  Ophthalmic Imaging

Seventh Term
MP 140  Introduction to Health Law and Ethics  
OMT 210  Advanced Diagnostics  
OMT 222  Practicum Second Year  
OMT 232  Seminar II

Total Credits: 98

* Could be used as General Education

Paraeducator
See Education (p. 91)

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 person, qualified by education, training or work experience who is employed or retained by a lawyer, law office, corporation, governmental agency, non-profit, or other entity and who performs specifically delegated substantive legal work for which a lawyer is responsible. Tasks may 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. Paralegals may not practice law and may not provide legal services directly to the public except as permitted by law. The program also provides students with skills which enable them to pursue jobs in alternative, related 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 interviewing, investigation, drafting 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
Admission Prerequisites
Academic Prerequisites
• High school completion or GED.
• 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.

Other Prerequisites
• Program advising is required. Students planning to enroll in the program should contact the department for specific eligibility requirements and advising.

Program Requirements
Academic Requirements
• A letter 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. PL 280A is offered as Pass/No pass only.

Other Requirements
• 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 58/65 competency (p. 13). Students should consult with program advisors for course planning.

### Paralegal Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL 101</td>
<td>Introduction to Law - Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>PL 102</td>
<td>Introduction to Law - Substantive Areas</td>
<td>3</td>
</tr>
<tr>
<td>PL 103</td>
<td>Introduction to Law - Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PL 107</td>
<td>Techniques of Interview</td>
<td>3</td>
</tr>
<tr>
<td>PL 130</td>
<td>Legal Software</td>
<td>3</td>
</tr>
<tr>
<td>PL 201</td>
<td>Legal Research and Library Use</td>
<td>3</td>
</tr>
<tr>
<td>PL 202</td>
<td>Computer Research in Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 204</td>
<td>Applied Legal Research and Drafting</td>
<td>3</td>
</tr>
</tbody>
</table>

Paralegal Program Electives 1
Paralegal Support Electives 2
Restricted General Education 3

| Total Credits | 90 |

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 Program Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL 104</td>
<td>Investigation Techniques for Paralegals</td>
<td>3</td>
</tr>
<tr>
<td>PL 105</td>
<td>Litigation</td>
<td>3</td>
</tr>
<tr>
<td>PL 109</td>
<td>Estate Planning</td>
<td>3</td>
</tr>
<tr>
<td>PL 111</td>
<td>Probate Practice</td>
<td>3</td>
</tr>
<tr>
<td>PL 113</td>
<td>Income Tax Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 116</td>
<td>Real Property Law I</td>
<td>3</td>
</tr>
<tr>
<td>PL 124</td>
<td>Law Office Management</td>
<td>3</td>
</tr>
<tr>
<td>PL 140</td>
<td>Immigration Law for Paralegals</td>
<td>3</td>
</tr>
<tr>
<td>PL 205</td>
<td>Advanced Litigation</td>
<td>3</td>
</tr>
<tr>
<td>PL 206</td>
<td>Intellectual Property Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 208</td>
<td>Family Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 210</td>
<td>Elder Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 216</td>
<td>Employment Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 219</td>
<td>Contract and Consumer Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 220</td>
<td>Worker's Compensation</td>
<td>3</td>
</tr>
<tr>
<td>PL 221</td>
<td>Bankruptcy Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 222</td>
<td>Corporate Law Practice</td>
<td>3</td>
</tr>
<tr>
<td>PL 224</td>
<td>Torts and Personal Injury</td>
<td>3</td>
</tr>
</tbody>
</table>

### Paralegal Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL 101</td>
<td>Introduction to Law - Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>PL 102</td>
<td>Introduction to Law - Substantive Areas</td>
<td>3</td>
</tr>
<tr>
<td>PL 103</td>
<td>Introduction to Law - Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PL 107</td>
<td>Techniques of Interview</td>
<td>3</td>
</tr>
<tr>
<td>PL 130</td>
<td>Legal Software</td>
<td>3</td>
</tr>
<tr>
<td>PL 201</td>
<td>Legal Research and Library Use</td>
<td>3</td>
</tr>
<tr>
<td>PL 202</td>
<td>Computer Research in Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 204</td>
<td>Applied Legal Research and Drafting</td>
<td>3</td>
</tr>
</tbody>
</table>

Paralegal Program Electives 1

| Total Credits | 45 |

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.

### Paralegal Program Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL 104</td>
<td>Investigation Techniques for Paralegals</td>
<td>3</td>
</tr>
<tr>
<td>PL 105</td>
<td>Litigation</td>
<td>3</td>
</tr>
<tr>
<td>PL 109</td>
<td>Estate Planning</td>
<td>3</td>
</tr>
<tr>
<td>PL 111</td>
<td>Probate Practice</td>
<td>3</td>
</tr>
<tr>
<td>PL 113</td>
<td>Income Tax Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 116</td>
<td>Real Property Law I</td>
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<tr>
<td>PL 124</td>
<td>Law Office Management</td>
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<tr>
<td>PL 140</td>
<td>Immigration Law for Paralegals</td>
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<td>PL 219</td>
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<td>PL 221</td>
<td>Bankruptcy Law</td>
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</tr>
<tr>
<td>PL 222</td>
<td>Corporate Law Practice</td>
<td>3</td>
</tr>
<tr>
<td>PL 224</td>
<td>Torts and Personal Injury</td>
<td>3</td>
</tr>
<tr>
<td>PL 226</td>
<td>Criminal Law for Paralegal</td>
<td>3</td>
</tr>
<tr>
<td>PL 230</td>
<td>Litigation II</td>
<td>3</td>
</tr>
<tr>
<td>PL 235</td>
<td>Litigation III</td>
<td>3</td>
</tr>
<tr>
<td>PL 240</td>
<td>Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>PL 260</td>
<td>Administrative Law for Paralegals</td>
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<tr>
<td>PL 275</td>
<td>Paralegal Career Development</td>
<td>1</td>
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<tr>
<td>PL 280A</td>
<td>Cooperative Education: Paralegal</td>
<td>3</td>
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</tbody>
</table>
PL 280A Cooperative Education: Paralegal

Parent Education

Sylvania Campus
Health Technology Building (HT), Room 318
971-722-4217 or 971-722-4218
www.pcc.edu/academics/index.cfm/76.html

Description
Classes are taught by PCC parent education instructors with expertise in working both with children and adults. Some classes are lecture and discussion and others are interactive with parents and children together. Each class is tailored to the ages of the children and includes study topics. The study topics for the term are chosen jointly by the participants and the instructor in each class. Topics include: development, guidance, communication, self-esteem, health, current issues and others.

Courses are designed to help participants develop skills for successful parenting, learn more about their roles as parents and enhance their relationship with their children. Parent Education courses include: HEC 157, HEC 201, HEC 226, HEC 280A and HEC 9421.

Philosophy

Cascade Campus
Cascade Hall (CH)
971-722-5251

Rock Creek Campus
Building 5, Room 245
971-722-7327

Sylvania Campus
Social Science Building (SS), Room 201
971-722-4289

www.pcc.edu/programs/philosophy/

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
Physical Education Building (PEB)
971-722-5524

Rock Creek Campus
Building 5, Room 245
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

Newberg Center
971-722-4210

www.pcc.edu/programs/pe/

Description
Portland Community College Physical Education promotes fit and healthy lifestyles for a diverse group of students by delivering a quality education through a wide variety of activity classes that includes the knowledge, skills, and practice necessary for living a physically active life.

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) office. Disability Services works with students to identify and ensure reasonable accommodations in PCC classes and programs.

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 academic advisor or with the institution to which they plan to transfer. For information on the Fitness Technology program, see Fitness Technology (p. 111) 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
Cascade Hall (CH)
971-722-5251

Rock Creek Campus
Building 5, Room 245
971-722-7327

Sylvania Campus
Social Science Building (SS), Room 201
971-722-4289

www.pcc.edu/programs/political-science/

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
See Music and Sonic Arts (p. 155).

Psychology
Cascade Campus
Cascade Hall (CH), Room 208
971-722-5251

Rock Creek Campus
Building 5, Room 245
971-722-7327

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

Sylvania Campus
Social Science Building (SS), Room 201
971-722-4289

www.pcc.edu/programs/political-science/

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.

Refrigeration, HVAC and Trade Related
See Facilities Maintenance Technology (p. 107)

Religious Studies
Cascade Campus
Cascade Hall (CH), Room 306
971-722-5251

Rock Creek Campus
Building 5, Room 245
971-722-7327

Southeast Campus
Scott 106
971-722-6217

www.pcc.edu/programs/religious-studies/

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 for work and study in disciplines such as religion and ministry, social service, archaeology, education, law, linguistics, or political science.

PCC offers four Religious Studies courses. The basic course is World Religions, R 210, which fulfills both General Education and cultural literacy requirements, as does Asian Religions, R 201. Both classes can be used to meet requirements for the Asian Studies Focus Award. Introduction to Old Testament, R 211 and Introduction to New Testament, R 212 provide overviews of the religious background to Western culture, and also meet prerequisites for students transferring to some private colleges and universities.

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 the 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

**Admission Prerequisites**

**Academic Prerequisites**

1. This is a limited entry program. Students must submit an application.
2. Complete WR 121 with a letter grade of "C" or better prior to entering the program.
3. Complete ASL 240 with a letter grade of "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.
   a. ASL 240 is a lecture course listed under Sign Language Studies in the college schedule and serves as a prerequisite course.
4. 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 letter grade of "C" or better prior to entering the program.
5. Demonstrate American Sign Language and other basic skill and knowledge competencies through the department-administered assessment given in the spring.

The deadline to complete the first four steps above is the last Friday in March. Once the fourth step 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.

**Other Prerequisites**

- None

**Program Requirements**

**Academic Requirements**

- 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 Benchmark Assessment 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 Benchmark Assessment. 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 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.

Other Requirements

- None

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.

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>ITP 111</td>
<td>5</td>
</tr>
<tr>
<td>ITP 270</td>
<td>6</td>
</tr>
<tr>
<td>General Education</td>
<td></td>
</tr>
<tr>
<td>ITP 241</td>
<td>4</td>
</tr>
<tr>
<td>ITP 120§</td>
<td>2</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 112§</td>
<td>4</td>
</tr>
<tr>
<td>ITP 230</td>
<td>3</td>
</tr>
<tr>
<td>ITP 180§</td>
<td>2</td>
</tr>
<tr>
<td>ITP 271</td>
<td>4</td>
</tr>
<tr>
<td>ITP 265</td>
<td>3</td>
</tr>
</tbody>
</table>

Third Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 272</td>
<td>4</td>
</tr>
<tr>
<td>ITP 276</td>
<td>3</td>
</tr>
<tr>
<td>ITP 279</td>
<td>2</td>
</tr>
<tr>
<td>ITP 113§</td>
<td>5</td>
</tr>
<tr>
<td>ITP 231</td>
<td>3</td>
</tr>
</tbody>
</table>

Fourth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 273</td>
<td>4</td>
</tr>
<tr>
<td>ITP 281</td>
<td>2</td>
</tr>
<tr>
<td>ITP 277</td>
<td>3</td>
</tr>
<tr>
<td>ITP 211</td>
<td>4</td>
</tr>
<tr>
<td>ITP 266</td>
<td>3</td>
</tr>
</tbody>
</table>

Fifth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 121§</td>
<td>2</td>
</tr>
<tr>
<td>ITP 267</td>
<td>3</td>
</tr>
<tr>
<td>ITP 274</td>
<td>4</td>
</tr>
<tr>
<td>ITP 283§1</td>
<td>3</td>
</tr>
<tr>
<td>ITP 212</td>
<td>4</td>
</tr>
</tbody>
</table>

Sixth Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 275§</td>
<td>4</td>
</tr>
<tr>
<td>ITP 268</td>
<td>2</td>
</tr>
<tr>
<td>ITP 2841</td>
<td>(3)</td>
</tr>
<tr>
<td>General Education</td>
<td>8</td>
</tr>
<tr>
<td>ITP 242</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credits: 107

§ Course cannot be substituted with another course. NOTE: students must complete ONE of the internships, ITP 283 or ITP 284, and the selected internship cannot be substituted with a non-internship course. Only one internship (ITP 283 or ITP 284) is required for the degree or certificate, however, students are strongly encouraged to take both. ITP 283 is normally taught in the winter term; ITP 284 is normally taught in the spring term. Students must select one.

Two-Year Certificate

Sign Language Interpretation (p. 168)

One-Year Certificate

Deaf Studies (p. 169)

Sign Language Interpretation Two-Year Certificate

Minimum 91 credits. Students must meet all certificate requirements.

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>ITP 111</td>
<td>5</td>
</tr>
<tr>
<td>ITP 120</td>
<td>2</td>
</tr>
<tr>
<td>ITP 241</td>
<td>4</td>
</tr>
<tr>
<td>ITP 270</td>
<td>6</td>
</tr>
</tbody>
</table>

Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 112</td>
<td>5</td>
</tr>
<tr>
<td>ITP 180</td>
<td>2</td>
</tr>
<tr>
<td>ITP 230</td>
<td>3</td>
</tr>
<tr>
<td>Course</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>ITP 271</td>
<td></td>
</tr>
<tr>
<td>ITP 265</td>
<td></td>
</tr>
<tr>
<td><strong>Third Term</strong></td>
<td></td>
</tr>
<tr>
<td>ITP 113</td>
<td>5</td>
</tr>
<tr>
<td>ITP 231</td>
<td>3</td>
</tr>
<tr>
<td><strong>Fourth Term</strong></td>
<td></td>
</tr>
<tr>
<td>ITP 211</td>
<td>4</td>
</tr>
<tr>
<td>HEC 226¹ or PSY 215</td>
<td>4</td>
</tr>
<tr>
<td>ITP 266</td>
<td>3</td>
</tr>
<tr>
<td><strong>Fifth Term</strong></td>
<td></td>
</tr>
<tr>
<td>ITP 121</td>
<td>2</td>
</tr>
<tr>
<td>ITP 212</td>
<td>4</td>
</tr>
<tr>
<td>ITP 267</td>
<td>3</td>
</tr>
<tr>
<td>ITP 285</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits:</strong></td>
<td>91</td>
</tr>
</tbody>
</table>

¹ HEC 226 or PSY 215 can be taken during any terms.

### Sign Language Studies (SLS)

**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 Sign Language Interpretation (p. 167) and the Sign Language 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.

### Deaf Studies One-Year Certificate

Minimum 55 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 111</td>
<td>5</td>
<td>American Sign Language I</td>
</tr>
<tr>
<td>ITP 241</td>
<td>4</td>
<td>Deaf Culture I</td>
</tr>
<tr>
<td>ITP 120</td>
<td>2</td>
<td>Fingerspelling I</td>
</tr>
</tbody>
</table>

#### Second Term

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITP 112</td>
<td>5</td>
<td>American Sign Language II</td>
</tr>
<tr>
<td>ITP 180</td>
<td>2</td>
<td>Field Experience: Applied ASL</td>
</tr>
<tr>
<td>ITP 230</td>
<td>3</td>
<td>American Sign Language Linguistics I</td>
</tr>
<tr>
<td>ITP 265</td>
<td>3</td>
<td>Interpreting Theory I: Foundations and Ethics</td>
</tr>
</tbody>
</table>

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**
Cascade Hall (CH), Rooms 208 & 306  
971-722-5251

**Rock Creek Campus**
Building 5, Room 245  
971-722-7327

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

**Sylvania Campus**
Social Science Building (SS), Room 201  
971-722-4289

[www.pcc.edu/programs/sociology/](http://www.pcc.edu/programs/sociology/)

**Description**

Sociology is a social science involving the study of the lives of people in relation to groups and societies. Sociologists examine everything from the analysis of brief interactions between anonymous individuals on the street to the study of global social processes.

The goal of the sociology program at PCC is to support students in cultivating a sociological imagination; that is, the ability to connect their personal experience to broader social and historical contexts. In doing so, students develop the skills to identify, analyze and intervene in the larger social forces that shape their lived experiences, their communities, and the broader social world.

At PCC, sociology students will: 1) develop a sociological imagination, 2) apply social theories and empirical evidence to analyze larger social forces, 3) analyze the construction of culture and its relationship to systems of inequality, 4) articulate a sociological perspective in written form, and 5) apply a sociological understanding of social change to intervene in the larger social forces that shape their lived experiences, their communities, and the broader social world.

Many sociology courses offer community-based learning options, which allow students to apply course material to volunteer work in the greater Portland community.

Regardless of the career a student chooses, from engineering to social services, sociology provides a foundation for understanding how the social world works and the roles we play within it.

### Spanish

**Cascade Campus**
Cascade Hall (CH), Room 208  
971-722-5390

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

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

**Sylvania Campus**
Communications Technology Building (CT), Room 219  
971-722-8004

[www.pcc.edu/programs/spanish/](http://www.pcc.edu/programs/spanish/)

**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.

### 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 971-722-4323

[www.pcc.edu/programs/theatre/](http://www.pcc.edu/programs/theatre/)

**Description**

The PCC Theatre Arts (TA) program offers a wide variety of courses on the Sylvania and the Cascade 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 skills taught in TA program classes and productions allow students to qualify for paid work in the PAC’s numerous rentals throughout the academic year, often leading to employment in the theatre community.
The Sylvania TA program embraces collaboration in the classroom and its 3 annual main-stage productions. 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, costume, lighting, make-up design; backstage crew positions; stage management and stagecraft. Our students often go on to 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.

The Sylvania TA program follows a two-year cycle, including a commitment to Classical, a Musical, American Classics, among 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. Auditions and crew assignments are open to all.

Theatre Arts courses provide a nurturing atmosphere for exploration of this collaborative and compelling art form. In addition, the popular annual student Short Play Festival showcases short works directed, acted, crewed and designed by PCC students. The Theatre Arts Club also produces various projects each term, occasional original works and staged readings. The popular Improvisation Club (PANTS) performs regularly and has won local acclaim and competitions.

The emerging TA program at Cascade Campus includes courses in acting, improv, movement, theatre appreciation, and collaborative classes with Multimedia (Acting for Camera and Directing Actors for the Camera). In Spring 2015, Cascade offered its first Devised Performance, an original piece created jointly by students and faculty.

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

Admission Prerequisites

Academic Prerequisites

• High school diploma, GED certificate, or equivalent required.
• Completing MTH 95, its equivalent or higher with a letter grade of "C" or better.
• Completion of WR 121, it's equivalent or higher with a letter grade of "C" or better.
• Completion of CH 151, its equivalent or higher with a letter grade of "C" or better.
• Completion of BI 112, its equivalent or higher with a letter grade of "C" or better.
• Completion of MP 111, its equivalent or higher with a letter grade of "C" or better.
• The Veterinary Technology program is a closed entry program with limited enrollment. Completing admission requirements and applying to the program does not guarantee admission. Admission to the first year of the program is based on high school and college grades, meeting the above program prerequisites, completion of required observation hours with a veterinarian, a letter of recommendation, and an interview.

Other Prerequisites

• A minimum of forty hours of observation with a veterinarian is required. This may be done as a paid employee or as a volunteer.

Program Requirements

Academic Requirements

• None
Other Requirements

• None

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 58/65 competency (p. 13). 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>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT 101</td>
<td>Introduction to Veterinary Technology</td>
<td>2</td>
</tr>
<tr>
<td>VT 104</td>
<td>Facility Ward Care</td>
<td>2</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>VT 105</td>
<td>Comparative Veterinary Anatomy and Physiology I</td>
<td>4</td>
</tr>
<tr>
<td>VT 121</td>
<td>Basic Animal Science</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
</tr>
<tr>
<td>VT 102</td>
<td>Animal Nursing and Restraint</td>
<td>3</td>
</tr>
<tr>
<td>VT 106</td>
<td>Comparative Veterinary Anatomy and Physiology II</td>
<td>4</td>
</tr>
<tr>
<td>VT 107</td>
<td>Veterinary Parasitology and Pathology</td>
<td>4</td>
</tr>
<tr>
<td>VT 108</td>
<td>Pharmaceutical Mathematics I</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
</tr>
<tr>
<td>VT 103</td>
<td>Animal Health Record Systems</td>
<td>3</td>
</tr>
<tr>
<td>VT 110</td>
<td>Specimen Collection Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>VT 111</td>
<td>Hematology and Urinalysis</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
</tr>
<tr>
<td>VT 109</td>
<td>Radiation Safety</td>
<td>2</td>
</tr>
<tr>
<td>VT 112</td>
<td>Clinical Laboratory Procedures</td>
<td>5</td>
</tr>
<tr>
<td>VT 113</td>
<td>Veterinary Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>VT 280A</td>
<td>Cooperative Education: Clinic I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td></td>
</tr>
<tr>
<td>VT 201</td>
<td>Anesthesiology</td>
<td>3</td>
</tr>
<tr>
<td>VT 204</td>
<td>Applied Radiography</td>
<td>3</td>
</tr>
<tr>
<td>VT 205</td>
<td>Veterinary Pharmacology</td>
<td>4</td>
</tr>
<tr>
<td>VT 211</td>
<td>Pharmaceutical Mathematics II</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Fifth Term</td>
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<tr>
<td>VT 202</td>
<td>Surgical Nursing and Laboratory Animal Procedures</td>
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</tr>
<tr>
<td>VT 207</td>
<td>Public Health and Sanitation</td>
<td>4</td>
</tr>
<tr>
<td>VT 208</td>
<td>Small Animal Diseases</td>
<td>3</td>
</tr>
<tr>
<td>VT 280B</td>
<td>Cooperative Education: Clinic II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Sixth Term</td>
<td></td>
</tr>
<tr>
<td>VT 203</td>
<td>Veterinary Procedures Seminar</td>
<td>3</td>
</tr>
<tr>
<td>VT 209</td>
<td>Large Animal Diseases and Procedures</td>
<td>3</td>
</tr>
<tr>
<td>VT 210</td>
<td>Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>VT 280C</td>
<td>Cooperative Education: Clinic III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Seventh Term</td>
<td></td>
</tr>
<tr>
<td>VT 203</td>
<td>Veterinary Procedures Seminar</td>
<td>3</td>
</tr>
<tr>
<td>VT 209</td>
<td>Large Animal Diseases and Procedures</td>
<td>3</td>
</tr>
<tr>
<td>VT 210</td>
<td>Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>VT 280C</td>
<td>Cooperative Education: Clinic III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits:</td>
<td>100</td>
</tr>
</tbody>
</table>

**Video Production**

See Multimedia (p. 150)

**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

**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/EO) program. The program is designed to fit the needs of a student (take as few or as many courses as desired), and have the following characteristics: open entry (enter at any time during the term); self-paced (learn at your own pace); flexible (select your own attendance schedule); individualized (a program can be tailor-made to fit specific needs); and, open exit (leave the program when you have met your training goals/needs).


Consult a program advisor through the department to help plan a course of study that will allow you to achieve your educational goals.

**Degrees and Certificates Offered**

**Associate of Applied Science Degree**

Welding Technology

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

- Flux Core Arc Welding Certification Preparation
- Gas Tungsten Arc Welding Certification Preparation
- Gas Tungsten Arc Welding Customized
- Metal Fabrication Customized
- Pipe Welding Certification Preparation
- Pipe Welding Customized
- Shielded Metal Arc Welding Certification
- Shielded Metal Arc Welding Customized
- Welding Certification Preparation Customized

**Welding Technology**

- Wire Welding Certification Preparation
- Wire Welding Customized
- Wire and TIG Welding

**Admission Prerequisites**

**Academic Prerequisites**

- None

**Other Prerequisites**

- Contact department for program advising.

**Program Requirements**

**Academic Requirements**

- None
Other Requirements

- None

Welding 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. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency (p. 13). Students should consult with program/academic advisors for course planning.

Welding Degree Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<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>
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<td>WLD 112</td>
<td>Shielded Metal Arc Welding: Mild Steel I (E7018)</td>
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<tr>
<td>WLD 113</td>
<td>Shielded Metal Arc Welding: Mild Steel II (E7018)</td>
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<tr>
<td>WLD 114</td>
<td>Shielded Metal Arc Welding: Mild Steel III (E6011)</td>
<td>4</td>
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<tr>
<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
<td>4</td>
</tr>
<tr>
<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
<td>4</td>
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<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>4</td>
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<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
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<tr>
<td>WLD 151</td>
<td>SMAW Certification Practice: Unlimited Thickness Mild Steel</td>
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<tr>
<td>WLD 152</td>
<td>Flux Cored Arc Welding (Gas Shielded) Certification Practice</td>
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<tr>
<td>WLD 153</td>
<td>Flux Cored Arc Welding (Self shielding) Cert. Practice</td>
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<tr>
<td>WLD 203</td>
<td>Structural Steel Welding Code &amp; Standards</td>
<td>4</td>
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<td>WLD 221</td>
<td>Gas Tungsten Arc Welding Mild Steel</td>
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<td>WLD 222</td>
<td>Gas Tungsten Arc Welding: Aluminum</td>
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<td>WLD 223</td>
<td>Gas Tungsten Arc Welding: Stainless Steel</td>
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<tr>
<td>WLD 260</td>
<td>Beginning Fabrication</td>
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<tr>
<td>WLD 263</td>
<td>Welding Technology - Capstone</td>
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<tr>
<td>WLD 265</td>
<td>Welding Program Electives</td>
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<tr>
<td>WLD 271</td>
<td>Welding Technology Capstone</td>
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Welding Program Electives

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<td>WLD 116B</td>
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<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>
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<td>Beginning Wire Welding</td>
<td>3</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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<tr>
<td>WLD 146B</td>
<td>Basic Pipe Welding Practice</td>
<td>3</td>
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<tr>
<td>WLD 156A</td>
<td>Beginning Oxy-Acetylene Welding Practice</td>
<td>3</td>
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<tr>
<td>WLD 156B</td>
<td>Basic Oxy-Acetylene Welding Practice</td>
<td>3</td>
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<tr>
<td>WLD 166A</td>
<td>Beginning Weld Practice Metal Sculpting</td>
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<tr>
<td>WLD 166B</td>
<td>Basic Weld Practice Metal Sculpting</td>
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<tr>
<td>WLD 176A</td>
<td>Beginning Fabrication Practice</td>
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<tr>
<td>WLD 176B</td>
<td>Basic Fabrication Practice</td>
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<td>Beginning Certification Welding Practice</td>
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<td>WLD 186B</td>
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<td>WLD 190C</td>
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<td>WLD 216</td>
<td>Miscellaneous Electrodes &amp; Advanced Positions</td>
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<td>Intermediate Welding Practice</td>
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<tr>
<td>WLD 216B</td>
<td>Advanced Metal Arc Welding</td>
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<td>WLD 221</td>
<td>Gas Tungsten Arc Welding: Mild Steel Pipe I</td>
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<tr>
<td>WLD 223</td>
<td>Gas Tungsten Arc Welding: Mild Steel Pipe II</td>
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<td>Intermediate Gas Tungsten Arc Welding (Heliarc)</td>
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<td>Advanced Gas Tungsten Arc Welding (Heliarc)</td>
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<td>Intermediate Wire Welding</td>
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<td>Advanced Wire Welding</td>
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<td>WLD 246A</td>
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<td>WLD 246B</td>
<td>Advanced Pipe Welding Practice</td>
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<tr>
<td>WLD 253</td>
<td>SMAW Certification Practice 3/8&quot; Mild Steel (E6011)</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>Preparation for Pipe Certification I</td>
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<td>Intermediate Oxy-Acetylene Welding Practice</td>
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<td>WLD 257</td>
<td>Preparation for Pipe Certification II</td>
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<td>WLD 258</td>
<td>Preparation for Downhill Pipe Certification I</td>
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<td>WLD 259</td>
<td>Preparation for Downhill Pipe Certification II</td>
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<td>WLD 261</td>
<td>Basic Fabrication</td>
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<td>WLD 262</td>
<td>Intermediate Fabrication</td>
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<td>WLD 266A</td>
<td>Intermediate Weld Practice Metal Sculpting</td>
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<tr>
<td>WLD 266B</td>
<td>Advanced Weld Practice Metal Sculpting</td>
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<td>WLD 271</td>
<td>Oxy-acetylene Welding Projects</td>
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<td>WLD 276A</td>
<td>Intermediate Fabrication Welding Practice</td>
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<td>WLD 276B</td>
<td>Advanced Fabrication Welding</td>
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<td>WLD 280A</td>
<td>Cooperative Education: Welding</td>
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<td>Cooperative Education: Welding - Seminar</td>
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<td>WLD 286A</td>
<td>Intermediate Certification Welding Practice</td>
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<td>WLD 286B</td>
<td>Advanced Certification Welding Practice</td>
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<tr>
<td>WLD 290</td>
<td>Submerged Arc Welding</td>
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<tr>
<td>WLD 295</td>
<td>Sculpture Welding II</td>
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</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: Career Pathway

Flux Core Arc Welding Certification Preparation (p. 174)
Gas Tungsten Arc Welding Certification Preparation (p. 174)
Gas Tungsten Arc Welding Customized (p. 174)
Metal Fabrication Customized (p. 174)
Pipe Welding Certification Preparation (p. 174)
Pipe Welding Customized (p. 174)
Shielded Metal Arc Welding Certification (p. 175)
Shielded Metal Arc Welding Customized (p. 175)
Welding Certification Preparation Customized (p. 175)
Welding Technology (p. 175)
Wire Welding Certification Preparation (p. 175)
Wire Welding Customized (p. 175)
Wire and TIG Welding (p. 176)

Flux Core Arc Welding Certification Preparation Career Pathway Certificate

Minimum 14 credits. Students must meet all certificate requirements. The Fluxed Cored Arc Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Flux Core Arc Welding Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WLD 136A</td>
<td>Beginning Wire Welding</td>
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<tr>
<td>WLD 136B</td>
<td>Basic Wire Welding</td>
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</tr>
<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>4</td>
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<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
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<tr>
<td>Total Credits</td>
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Gas Tungsten Arc Welding Certification Preparation Career Pathway Certificate

Minimum 12 credits. Students must meet all certificate requirements. The Gas Tungsten Arc Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Gas Tungsten Arc Welding Certification Preparation Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 221</td>
<td>Gas Tungsten Arc Welding Mild Steel</td>
<td>4</td>
</tr>
<tr>
<td>WLD 222</td>
<td>Gas Tungsten Arc Welding: Aluminum</td>
<td>4</td>
</tr>
<tr>
<td>WLD 223</td>
<td>Gas Tungsten Arc Welding: Stainless Steel</td>
<td>4</td>
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<tr>
<td>Total Credits</td>
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</table>

Gas Tungsten Arc Welding Customized Career Pathway Certificate

Minimum 12 credits. Students must meet all certificate requirements. The Gas Tungsten Arc Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Gas Tungsten Arc Welding Customized Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 126A</td>
<td>Beginning Gas Tungsten Arc Welding (Heliarc)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 126B</td>
<td>Basic Gas Tungsten Arc Welding (Heliarc)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 226A</td>
<td>Intermediate Gas Tungsten Arc Welding (Heliarc)</td>
<td>3</td>
</tr>
<tr>
<td>WLD 226B</td>
<td>Advanced Gas Tungsten Arc Welding (Heliarc)</td>
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<tr>
<td>Total Credits</td>
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</table>

Pipe Welding Certification Preparation Career Pathway Certificate

Minimum 24 credits. Students must meet all certificate requirements. The Pipe Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Pipe Welding Certification Preparation Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WLD 256</td>
<td>Preparation for Pipe Certification I</td>
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<td>WLD 224</td>
<td>Gas Tungsten Arc Welding: (Mild Steel) Pipe I</td>
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<tr>
<td>WLD 225</td>
<td>Gas Tungsten Arc Welding: (Mild Steel) Pipe II</td>
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<tr>
<td>WLD 258</td>
<td>Preparation for Downhill Pipe Certification I</td>
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<td>WLD 257</td>
<td>Preparation for Pipe Certification II</td>
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<td>WLD 259</td>
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Pipe Welding Customized Career Pathway Certificate

Minimum 12 credits. Students must meet all certificate requirements. The Pipe Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Pipe Welding Customized Courses

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>WLD 146A</td>
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<td>WLD 146B</td>
<td>Basic Pipe Welding Practice</td>
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<tr>
<td>WLD 246A</td>
<td>Intermediate Pipe Welding Practice</td>
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</tr>
<tr>
<td>WLD 246B</td>
<td>Advanced Pipe Welding Practice</td>
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<tr>
<td>Total Credits</td>
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<td>12</td>
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</table>
Shielded Metal Arc Wielding Certification Preparation Career Pathway Certificate
Minimum 16 credits. Students must meet all certificate requirements. The Shielded Metal Arc Wielding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Shielded Metal Arc Wielding Certification Preparation Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 111</td>
<td>Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting</td>
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</tr>
<tr>
<td>WLD 112</td>
<td>Shielded Metal Arc Welding: Mild Steel I (E7018)</td>
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<tr>
<td>WLD 113</td>
<td>Shielded Metal Arc Welding: Mild Steel II (E7018)</td>
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<tr>
<td>WLD 151</td>
<td>SMAW Certification Practice: Unlimited Thickness Mild Steel</td>
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</table>

Total Credits 16

Shielded Metal Arc Wielding Customized Career Pathway Certificate
Minimum 12 credits. Students must meet all certificate requirements. The Shielded Metal Arc Wielding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Shielded Metal Arc Wielding Customized Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
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<td>WLD 116A</td>
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<td>WLD 116B</td>
<td>Basic Welding Practice</td>
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<td>WLD 216A</td>
<td>Intermediate Welding Practice</td>
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</tr>
<tr>
<td>WLD 216B</td>
<td>Advanced Metal Arc Welding</td>
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</tbody>
</table>

Total Credits 12

Welding Certification Preparation Customized Career Pathway Certificate
Minimum 12 credits. Students must meet all certificate requirements. The Welding Certification Preparation Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Welding Certification Preparation Customized Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>WLD 186A</td>
<td>Beginning Certification Welding Practice</td>
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</tr>
<tr>
<td>WLD 186B</td>
<td>Basic Certification Welding Practice</td>
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</tr>
<tr>
<td>WLD 286A</td>
<td>Intermediate Certification Welding Practice</td>
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<tr>
<td>WLD 286B</td>
<td>Advanced Certification Welding Practice</td>
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</tbody>
</table>

Total Credits 12

Welding Technology Career Pathway Certificate
Minimum 44 credits. Students must meet all certificate requirements. The Welding Technology Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Welding Technology Certificate Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<td>Blueprint Reading</td>
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<tr>
<td>WLD 111</td>
<td>Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting</td>
<td>4</td>
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<td>WLD 112</td>
<td>Shielded Metal Arc Welding: Mild Steel I (E7018)</td>
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<tr>
<td>WLD 113</td>
<td>Shielded Metal Arc Welding: Mild Steel II (E7018)</td>
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<tr>
<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
<td>4</td>
</tr>
<tr>
<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
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</tr>
<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>4</td>
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<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
<td>4</td>
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<tr>
<td>WLD 151</td>
<td>SMAW Certification Practice: Unlimited Thickness Mild Steel</td>
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</tr>
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<td>WLD 152</td>
<td>Flux Cored Arc Welding (Gas Shielded) Certification Practice</td>
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</tr>
<tr>
<td>WLD 153</td>
<td>Flux Cored Arc Welding (Self shielding) Cert. Practice</td>
<td>4</td>
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</tbody>
</table>

Total Credits 44

Wire Welding Certification Preparation Career Pathway Certificate
Minimum 24 credits. Students must meet all certificate requirements. The Wire Welding Certification Preparation Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Wire Welding Certification Preparation Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
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<tr>
<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
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</tr>
<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>4</td>
</tr>
<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
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<td>WLD 152</td>
<td>Flux Cored Arc Welding (Gas Shielded) Certification Practice</td>
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<td>WLD 153</td>
<td>Flux Cored Arc Welding (Self shielding) Cert. Practice</td>
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</table>

Total Credits 24

Wire Welding Customized Career Pathway Certificate
Minimum 12 credits. Students must meet all certificate requirements. The Wire Welding Customized Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Wire Welding Customized Preparation Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WLD 136A</td>
<td>Beginning Wire Welding</td>
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<tr>
<td>WLD 136B</td>
<td>Basic Wire Welding</td>
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<tr>
<td>WLD 236A</td>
<td>Intermediate Wire Welding</td>
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</tr>
<tr>
<td>WLD 236B</td>
<td>Advanced Wire Welding</td>
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</tr>
</tbody>
</table>

Total Credits 12
Wire and TIG Welding Career Pathway Certificate

Minimum 44 credits. Students must meet all certificate requirements. The Wire and TIG Welding Pathway Certificate is a Career Pathway. All courses are contained in the Welding AAS Degree.

Wire and TIG Welding Pathway Certificate

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WLD 101</td>
<td>Welding Processes &amp; Applications</td>
<td>4</td>
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<tr>
<td>WLD 102</td>
<td>Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>WLD 131</td>
<td>Gas Metal Arc Welding</td>
<td>4</td>
</tr>
<tr>
<td>WLD 132</td>
<td>Gas Metal Arc Welding-Pulse</td>
<td>4</td>
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<tr>
<td>WLD 141</td>
<td>Flux-Cored Arc Welding I (Gas Shielded)</td>
<td>4</td>
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<tr>
<td>WLD 142</td>
<td>Flux-Cored Arc Welding II (Self Shielding)</td>
<td>4</td>
</tr>
<tr>
<td>WLD 152</td>
<td>Flux Cored Arc Welding (Gas Shielded) Certification Practice</td>
<td>4</td>
</tr>
<tr>
<td>WLD 153</td>
<td>Flux Cored Arc Welding (Self shielding) Cert. Practice</td>
<td>4</td>
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<td>WLD 221</td>
<td>Gas Tungsten Arc Welding Mild Steel</td>
<td>4</td>
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<tr>
<td>WLD 222</td>
<td>Gas Tungsten Arc Welding: Aluminum</td>
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<tr>
<td>WLD 223</td>
<td>Gas Tungsten Arc Welding: Stainless Steel</td>
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</tbody>
</table>

Total Credits: 44

Women’s Studies (WS)

Cascade Campus
Cascade Hall (CH)
971-722-5251

Rock Creek Campus
Building 5, Room 245
971-722-7327

Sylvania Campus
Social Science (SS) Room 201
971-722-4289

www.pcc.edu/programs/womens-studies/

Description

Women’s Studies introduces the past and present achievements and experiences of women from an interdisciplinary and global perspective. The courses explore the decisive role that gender has played and continues to play in human societies and contributes to an understanding of women’s lives. Knowledge derived from women’s studies courses will enable people to analyze current problems that women face in the areas of employment, the family, domestic violence, health and the legal system. Since women comprise more than half of the world’s population, an understanding of their experiences, history, needs and abilities is an asset to students considering careers in such fields as education, social service, government, business, law, the ministry, journalism, health occupations and childcare.

Women’s Studies courses require college-level reading and writing skills. All Women’s Studies courses can apply towards the Associate of Arts Oregon Transfer Degree (AAOT) requirements. WS 101 may be taken for either arts and letters credit, or social science credit.
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 a particular 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 sixteen credits from the following, 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:

**Anthropology**

ATH 103  Introduction to Cultural Anthropology  4

**Art**

ART 207  History of Asian Art (India)  4
ART 208  History of Asian Art (China)  4
ART 209  History of Asian Art (Japan)  4

**Business Administration**

BA 203  Introduction to International Business  3

**Chinese**

All language and culture credit courses may apply to the focus award. They vary from 3-5 credits.

**Communication Studies**

COMM 140  Introduction to Intercultural Communication  4

**Geography**

GEO 107  Geography of Global Issues  4

**History**

HST 105  History of India and South Asia Region  4
HST 106  History of China  4
HST 107  History of Korea and Japan  4

**Japanese**

All language and culture credit courses may apply to the focus award. They vary from 1-6 credits

**Literature**

ENG 207  World Literature - Asian (India)  4
ENG 208  World Literature - Asian (China)  4
ENG 209  World Literature - Asian (Japan)  4

**Music**

MUS 108  Music Cultures of the World  3

**Philosophy**

PHL 210  Introduction to Asian Philosophy  4

**Physical Education**

Any PE course with an Asian focus, such as Aikido, Judo, Karate, Tae Kwon Do, Tai Chi, and Yoga may apply to the focus award.

**Political Science**

PS 204  Comparative Political Systems  4
PS 205  Global Politics: Conflict & Cooperation  4

**Religious Studies**

R 201  Asian Religions  4
R 210  World Religions  4

**Women’s Studies**

WS 201  Intercultural Women’s Studies  4

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 on the award and to connect with a mentor, contact Jeffer Daykin, jeffer.daykin15@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): www.eastwestcenter.org/ASDP. In addition, PCC is affiliated with the Oregon East Asia Network: oean.uoregon.edu.

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.

3

PCC offers one of the largest selections of courses that reflect the Black experience. This focus award enhances existing degrees and certificates and shows prospective employers and transfer colleges a foundational focus on the black experience and multicultural issues. In addition, students completing the Africa series of courses build a foundation for International Studies. Students completing the award will be eligible for the lower division course requirements for Portland State University’s Black Studies degree.
Students who are applying for the Black Studies Focus Award should call 971-722-5637.

**Black Studies Focus Award Requirements**

To receive the Black Studies Focus Award, a student will complete at least 16 credits from the following choices, with no more than two courses from one discipline.

Courses may be selected from the following:

- **English**
  - ENG 256  African-American Literature 4
  - ENG 257  African-American Literature 4
  - ENG 258  African-American Literature 4

- **Humanities**
  - HUM 204  History of Africa 4
  - HUM 205  African Literature 4
  - HUM 214  Race and Racism 4

- **History**
  - HST 274  African American History I 4
  - HST 275  African American History II 4
  - HST 276  African American History III 4
  - HST 284  History of Africa 4

- **Music**
  - MUS 205  Introduction to Jazz History 3
  - MUS 208  African-American Music 3
  - MUS 209  African-American Music 3
  - MUS 210  African-American Music 3

- **Sociology**
  - SOC 213  Diversity in the United States 4

**China Studies Focus Award**

The China Studies Focus Award recognizes students who have gained considerable knowledge of China, its language and its culture. The award can be especially useful to transfer students who will focus on International Studies, Asian Studies, International Business, or Chinese. The award also demonstrates to employers that the student has a significant background in East Asian culture and an expanded worldview.

To receive the China Studies Focus Award, a student must complete a minimum of 15 credits, including CHN 102 or above or demonstrating equivalent language proficiency.

A focus award is not a state approved award and will not appear on a student’s transcript. For more information, Contact Tom Huminski, Department of English, thuminsk@pcc.edu.

**China Studies Focus Award Requirements**

1. Meet Chinese language proficiency by completing CHN 102 or above or demonstrating equivalent language skills.
2. Complete a minimum of one class from Core A course list.
3. Complete a minimum of one class from the Core B course list.
4. Complete a minimum of 15 total credits.

**Chinese language courses**

- CHN 101  First Year Chinese 5

**Communication Studies Focus Award**

The Communication Studies Focus Award recognizes students who have gained considerable background in Communication Studies as part of their certificate or transfer degree program. The award is granted to students who have completed the required combination of Communication Studies courses. This award is especially useful for students seeking to minor or major in Communication Studies at Portland State University or any Oregon college or university. Students who wish to transfer 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](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 additional courses from the approved list

**Required Courses**

- COMM 100  Introduction to Communication 4
- COMM 111  Public Speaking (or COMM 111H) 4
- COMM 214  Interpersonal Communication: Process and Theory 4

**Additional Courses (choose two)**

- COMM 105  Listening 4
- COMM 110  Voice and Articulation 3
- COMM 112  Persuasive Speaking 4
- COMM 130  Business & Professional Communication 4
- COMM 140  Introduction to Intercultural Communication 4
- COMM 212  Voice & Diction 4
- COMM 215  Small Group Communication: Process and Theory 4
- COMM 227  Nonverbal Communication 4
- COMM 228  Mass Communication and Society 4
Creative Writing Focus Award

www.pcc.edu/programs/writing/creative/

The Creative Writing Focus Award is designed to offer students a rounded experience in the craft of creative writing. Students work on their own writing, workshop their writing and the writing of others, study literature, and learn about editing and publishing. This program introduces students to the field of creative writing as well as enhancing degrees from other disciplines. Through introductory and advanced courses in creative writing and literature, a Creative Writing Focus 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.

Creative Writing Focus Award Requirements

To receive the Creative Writing Focus Award, students must complete 20 credits that include:

8 credits of introductory coursework
- WR 239 Creative Writing (Word & Image)
- WR 240 Creative Writing - Nonfiction
- WR 241 Creative Writing - Fiction
- WR 242 Creative Writing - Poetry
- WR 243 Creative Writing - Script Writing

4 credits of editing and publishing coursework
- WR 246 Advanced Creative Writing, Editing & Publishing

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 249 Advanced Creative Writing, Editing & Publishing II

4 credits of English literature coursework

Any one of PCC's 4-credit English literature courses will satisfy the literature requirement.

Additional Information

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, in place of WR 246.

Students completing both WR 246 and WR 249 receive a Focus Award Plus.

All advanced creative writing courses and the literature class must be taken at Portland Community College.

Students applying for the Creative Writing Focus Award should contact the administrative liaison for the focus award at 971-722-4266.

Global Studies Focus Award

The courses included in PCC's Global Studies Focus Award foster a rich understanding and appreciation of the diverse cultures of the world. Students who successfully complete a minimum of four courses for a total of twelve credits or more from the Global Studies Focus Award requirements have the distinction of receiving a Global Studies Focus Award, which recognizes a foundation in international studies. These studies encourage broader reflections about the nature of culture and how it shapes everything from worldview to everyday life. Above all the curriculum enables students to develop a multidimensional perspective on the world, its many cultures, as well as their own life experiences. Students earning a Focus Award will be in a position to apply these perspectives and demonstrate cultural understanding to prospective employers and transfer colleges. This award is especially useful for students seeking to minor or major in International Studies at Portland State University, as well as other institutions offering and internationally-focused major or minor.

Students applying for the Global Studies Focus Award should contact the administrative liaison for the focus award at 971-722-4266.

Global Studies Focus Award Requirements

Students must complete four courses for a total of twelve credits or more:

1) INTL 201: Introduction to International Studies.

2) a course from the Global Arts & Letters list.

3) a course from the Global Social Science list.

4) a course from either Global Arts & Letters or Global Social Science list.

In addition to the formal coursework outlined above, students are strongly encouraged to expand their learning beyond the classrooms by attending internationally-focused events on campus and in the community and by participating in a study abroad program. Those who do will be extremely well prepared to transfer to the International Studies program at the bachelor's and graduate levels.

Required course

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTL 201</td>
<td>Introduction to International Studies</td>
<td>4</td>
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</table>

Global Social Science Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATH 103</td>
<td>Introduction to Cultural Anthropology</td>
<td>4</td>
</tr>
<tr>
<td>ATH 207</td>
<td>Cultural Anthropology: Culture Concepts</td>
<td>4</td>
</tr>
<tr>
<td>ATH 208</td>
<td>Cultural Anthropology: Cultures of the World</td>
<td>4</td>
</tr>
<tr>
<td>ATH 209</td>
<td>Cultural Anthropology: Cultural Growth &amp; Change</td>
<td>4</td>
</tr>
<tr>
<td>ATH 210</td>
<td>Introduction to Shamanism</td>
<td>4</td>
</tr>
<tr>
<td>ATH 212</td>
<td>Human Environments: Ecological Aspects</td>
<td>4</td>
</tr>
<tr>
<td>EC 230</td>
<td>Contemporary World Economic Issues: International Economics</td>
<td>3</td>
</tr>
</tbody>
</table>
GEO 105 Introduction to Human Geography
GEO 106 World Regional Geography
GEO 107 Geography of Global Issues
GEO 204 Geography of Middle East
GEO 230 Geography of Race & Ethnic Conflicts
HST 101 History of Western Civilization: Ancient to Medieval
HST 101H History of Western Civilization: Ancient to Medieval Honors
HST 102 History of Western Civilization: Medieval to Modern
HST 102H History of Western Civilization: Medieval to Modern - Honors
HST 103 History of Western Civilization: Modern Europe
HST 103H History of Western Civilization: Modern Europe - Honors
HST 104 History of the Middle East
HST 105 History of India and South Asia Region
HST 106 History of China
HST 107 History of Korea and Japan
HST 111 U.S. History: Skills and Issues
HST 270 History of Mexico
HST 271 History of Central America and the Caribbean
HST 284 History of Africa
HST 285 The Holocaust
HST 278 Russian History I
HST 279 Russian History II
PS 204 Comparative Political Systems
PS 205 Global Politics: Conflict & Cooperation
PS 211 Peace and Conflict
PS 220 U.S. Foreign Policy
PS 221 Globalization and International Relations
PS 225 Political Ideologies: Idea Systems
WS 101 Women's Studies
WS 201 Intercultural Women's Studies

Global Arts & Letters Courses
ART 207 History of Asian Art
ART 208 History of Asian Art
ART 209 History of Asian Art
CHLA 201 Introduction to Chicano/Latino Studies I
CHLA 202 Introduction to Chicano/Latino Studies II
CHLA 203 Introduction to Chicano/Latino Studies III
CHN 201 Second Year Chinese
CHN 202 Second Year Chinese
CHN 203 Second Year Chinese
CHN 260 Chinese Culture
COMM 140 Introduction to Intercultural Communication
ENG 107 World Literature
ENG 108 World Literature
ENG 207 World Literature - Asian (India)
ENG 208 World Literature - Asian (China)
ENG 209 World Literature - Asian (Japan)

4 ENG 213 Latin American Literature
4 ENG 215 Literature of Genocide
4 ENG 246 Transnational Literature
4 FR 201 Second Year French
4 FR 202 Second Year French
4 FR 203 Second Year French
4 GER 201 Second Year German
4 GER 202 Second Year German
4 GER 203 Second Year German
4 JPN 201 Second Year Japanese
4 JPN 202 Second Year Japanese
4 JPN 203 Second Year Japanese
4 JPN 260A Japanese Culture
4 JPN 261A Japanese Culture
4 JPN 262A Japanese Culture
4 MUS 108 Music Cultures of the World
4 PHL 210 Introduction to Asian Philosophy
4 R 201 Asian Religions
4 R 210 World Religions
4 RUS 201 Second Year Russian
1 RUS 270A Readings in Russian
3 RUS 270B Readings in Russian
2 RUS 202 Second Year Russian
5 RUS 203 Second Year Russian
4 SPA 201 Second Year Spanish - First Term
4 SPA 202 Second Year Spanish - Second Term
4 SPA 203 Second Year Spanish - Third Term

Health Studies Focus Award

http://www.pcc.edu/programs/health/

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:

• 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  3
& PE 295 and Health and Fitness for Life Lab  3

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
http://www.pcc.edu/programs/history/focus-awards

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 971-722-8267.

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  History of Western Civilization: Medieval to Modern  4

Salvage and Conflict Focus Award

Students who are applying for the Peace and Conflict Focus Award should email Jamee Kristen at jamee.kristen@pcc.edu.

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

<table>
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<tr>
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<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>PS 211</td>
<td>Peace and Conflict</td>
<td>4</td>
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<tr>
<td>PS 280B</td>
<td>Cooperative Education: Community Service &amp; Action Seminar</td>
<td>4</td>
</tr>
<tr>
<td>PS 280C</td>
<td>Cooperative Education: Peace and Conflict</td>
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</table>

Category I: Personal to Societal Peace and Conflict

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ATH 103</td>
<td>Introduction to Cultural Anthropology</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 261</td>
<td>Literature of Science Fiction</td>
<td>4</td>
</tr>
<tr>
<td>HST 203</td>
<td>History of the United States 1914 to Present</td>
<td>4</td>
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<tr>
<td>PHL 202</td>
<td>Ethics</td>
<td>4</td>
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<tr>
<td>PS 201</td>
<td>U.S. Government</td>
<td>4</td>
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<tr>
<td>PSY 216</td>
<td>Social Psychology</td>
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<tr>
<td>SOC 204</td>
<td>Sociology in Everyday Life</td>
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<td>SOC 205</td>
<td>Social Change in Societies</td>
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<td>SOC 206</td>
<td>Social Problems</td>
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Category II: Race and Gender, and Peace and Conflict

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>ENG 212</td>
<td>Biography and Autobiography</td>
<td>4</td>
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<tr>
<td>ENG 222</td>
<td>Images of Women in Literature</td>
<td>4</td>
</tr>
<tr>
<td>ENG 240</td>
<td>Introduction to Native American Literatures</td>
<td>4</td>
</tr>
<tr>
<td>ENG 258</td>
<td>African-American Literature</td>
<td>4</td>
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<tr>
<td>ENG 260</td>
<td>Introduction to Women Writers</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 218</td>
<td>American Indian History</td>
<td>4</td>
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<tr>
<td>HST 225</td>
<td>History of Women, Sex, and the Family</td>
<td>4</td>
</tr>
<tr>
<td>HST 276</td>
<td>African American History III</td>
<td>4</td>
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<tr>
<td>SOC 218</td>
<td>Sociology of Gender</td>
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Category III: Environmental and Ecological Peace and Conflict

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<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ATH 214</td>
<td>Human Environments: Ecological Aspects</td>
<td>4</td>
</tr>
<tr>
<td>BI 141</td>
<td>Habitats: Life of the Forest</td>
<td>4</td>
</tr>
<tr>
<td>BI 142</td>
<td>Habitats: Marine Biology</td>
<td>4</td>
</tr>
<tr>
<td>BI 143</td>
<td>Habitats: Fresh Water Biology</td>
<td>4</td>
</tr>
<tr>
<td>GEO 105</td>
<td>Introduction to Human Geography</td>
<td>4</td>
</tr>
<tr>
<td>GEO 106</td>
<td>World Regional Geography</td>
<td>4</td>
</tr>
<tr>
<td>GEO 209</td>
<td>Physical Geography: Weather and Climate Perspectives</td>
<td>4</td>
</tr>
<tr>
<td>ESR 171</td>
<td>Environmental Science: Biological Perspectives</td>
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<tr>
<td>ESR 172</td>
<td>Environmental Science: Chemical Perspectives</td>
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</tr>
<tr>
<td>ESR 173</td>
<td>Environmental Science: Geological Perspectives</td>
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Category IV: Global Peace and Conflict

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 230</td>
<td>Contemporary World Economic Issues: International Economics</td>
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</tr>
<tr>
<td>ENG 265</td>
<td>International Political Poetry</td>
<td>4</td>
</tr>
<tr>
<td>GEO 107</td>
<td>Geography of Global Issues</td>
<td>4</td>
</tr>
<tr>
<td>HST 103</td>
<td>History of Western Civilization: Modern Europe</td>
<td>4</td>
</tr>
<tr>
<td>PS 205</td>
<td>Global Politics: Conflict &amp; Cooperation</td>
<td>4</td>
</tr>
<tr>
<td>PS 220</td>
<td>U.S. Foreign Policy</td>
<td>4</td>
</tr>
<tr>
<td>PS 225</td>
<td>Political Ideologies: Idea Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

Category V: Communication: Peace and Conflict

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 100</td>
<td>Introduction to Communication</td>
<td>4</td>
</tr>
<tr>
<td>COMM 105</td>
<td>Listening</td>
<td>4</td>
</tr>
<tr>
<td>COMM 140</td>
<td>Introduction to Intercultural Communication</td>
<td>4</td>
</tr>
<tr>
<td>ENG 197</td>
<td>Film Studies: Contemporary Themes and Genres</td>
<td>4</td>
</tr>
<tr>
<td>MUS 207</td>
<td>Introduction to the History of Folk Music</td>
<td>3</td>
</tr>
<tr>
<td>PHL 191</td>
<td>Analysis &amp; Evaluation of Argument</td>
<td>4</td>
</tr>
<tr>
<td>PHL 197</td>
<td>Manufacturing Reality: Critical Thinking and the Media</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: Other courses, or even sections of courses, may also be available for PACS Focus award credit. Consult Jamee Kristen (jamee.kristen@pcc.edu) for the most up-to-date information.

Social Justice Focus Award

PCC’s Social Justice Focus Award develops an interdisciplinary understanding of systems of power, privilege, and domination including the personal, social, cultural, economic, and political consequences on communities, the environment, and society. Students will explore approaches to social change and social movements and engage in practical campus- and community-based experiences with organizations addressing these issues.

Students who complete the Social Justice Focus Award will be able to connect with the University Studies, Sociology, Women’s Studies, Conflict Resolution and the Communities of Practice programs at Portland State University and the Social Justice minor at the University of Portland. Focus Awards are not to be confused with degrees or certificates, are not officially recognized by the state, and do not appear on transcripts. Focus Awards can be used to demonstrate academic and professional interest, critical thinking, and leadership. This award is especially useful for resumes, personal statements, interviews, and applications for internships, scholarships, university admissions and jobs.

For more information and to earn the Social Justice Focus Award please send an email to socialjustice-group@pcc.edu.
Social Justice Focus Award Requirements

Students must complete a total of 15-16 credits with a C or better.

1. Two courses from Group A
2. Two courses from Group B
3. No more than two courses from one discipline

**Group A: take two courses**
- CG 191 Exploring Identity and Diversity for College Success
- SOC 215 Social Issues and Movements
- SOC 206 Social Problems
- WS 202 Women, Activism and Social Change

**Group B: take two courses**
- CG 191 Exploring Identity and Diversity for College Success
- CHLA 202 Introduction to Chicano/Latino Studies II
- COMM 140 Introduction to Intercultural Communication
- ENG 237 American Working Class Literature
- HE 264 Health, Food Systems, and the Environment
- HUM 214 Race and Racism
- PHL 202 Ethics
- PS 211 Peace and Conflict
- or SOC 211 Peace and Conflict
- SOC 204 Sociology in Everyday Life
- SOC 206 Social Problems
- SOC 213 Diversity in the United States

Choose one of the following:
- SOC 214A Illumination Project: Tools for Creative Social Activism 1
- SOC 214B Illumination Project: Tools for Creative Social Activism 2
- SOC 214C Illumination Project: Tools for Creative Social Activism 3
- SOC 215 Social Issues and Movements
- WS 101 Women’s Studies
- WS 202 Women, Activism and Social Change

**Biology**
- BI 101 Biology
- One class only from the following:
  - BI 141 Habitats: Life of the Forest
  - BI 142 Habitats: Marine Biology
  - BI 143 Habitats: Fresh Water Biology
  - BI 145 Intro. to Fish and Wildlife Conservation and Management
  - BI 160 Ecology/Field Biology: Coast
  - BI 163 Organic Gardening
  - BI 164 Bird ID and Ecology
  - BI 200A Principles of Ecology: Field Biology
  - BI 200B Principles of Ecology: Field Biology
  - BI 200C Principles of Ecology: Field Biology

**Environmental Studies**
- ESR 140 Introduction to Sustainability
- ESR 141 Introduction to Individual Sustainability

Choose one of the following:
- ESR 171 Environmental Science: Biological Perspectives
- ESR 172 Environmental Science: Chemical Perspectives
- ESR 173 Environmental Science: Geological Perspectives
- ESR 201 Applied Environmental Studies: Science/Policy Consideration
- ESR 203 Applied Environmental Studies: Project

**Health**
- HE 264 Health, Food Systems, and the Environment
- HE 278 Human Health and the Environment

**Literature**
- ENG 230 Environmental Literature
- ENG 269 Wilderness Literature

**Philosophy**
- PHL 206 Introduction to Environmental Ethics

**Political Science**
- PS 280A Cooperative Education: Political Science
- PS 297 Environmental Politics and Policy

**Sociology**
- SOC 228 Introduction to Environmental Sociology
- SOC 280A Cooperative Education: Sociology

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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 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.

**Women's Studies Focus Award**

Cascade Campus
Cascade Hall (CH)
971-722-5251

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

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 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

<table>
<thead>
<tr>
<th>Required Course</th>
<th>Elective Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS 101</td>
<td>AD 103 Women and Addiction</td>
</tr>
<tr>
<td></td>
<td>ART 210 Women in Art</td>
</tr>
<tr>
<td></td>
<td>COMM 237 Gender and Communication</td>
</tr>
<tr>
<td></td>
<td>EC 216 Labor Markets: Economics of Gender, Race, and Work</td>
</tr>
<tr>
<td></td>
<td>ENG 222 Images of Women in Literature</td>
</tr>
<tr>
<td></td>
<td>ENG 260 Introduction to Women Writers</td>
</tr>
<tr>
<td></td>
<td>HE 212 Women's Health</td>
</tr>
<tr>
<td></td>
<td>HST 204 History of Women in the U.S.: Pre-colonial to 1877</td>
</tr>
<tr>
<td></td>
<td>HST 205 History of Women in the U.S.: 1877 to Present</td>
</tr>
<tr>
<td></td>
<td>HST 225 History of Women, Sex, and the Family</td>
</tr>
<tr>
<td></td>
<td>PSY 231 Human Sexuality</td>
</tr>
<tr>
<td></td>
<td>PSY 232 Human Sexuality</td>
</tr>
<tr>
<td></td>
<td>SOC 218 Sociology of Gender</td>
</tr>
<tr>
<td></td>
<td>SPA 271A Readings in Spanish Literature (Women Writers)</td>
</tr>
<tr>
<td></td>
<td>WS 201 Intercultural Women's Studies</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.

Developmental Education

Cascade Campus
Cascade Hall (CH), Room 208
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.

RD 115 College Reading 4
RD 116 College Vocabulary Development 3
RD 117 Advanced College Reading 3

Developmental English

Consult the Course Descriptions (p. 34) section of the catalog for complete course titles and descriptions.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ALC 50</td>
<td>English Skills Lab - 0 credits</td>
<td>0</td>
</tr>
<tr>
<td>ALC 51</td>
<td>English Skills Lab - 1 credits</td>
<td>1</td>
</tr>
<tr>
<td>ALC 52</td>
<td>English Skills Lab - 2 credits</td>
<td>2</td>
</tr>
<tr>
<td>ALC 53</td>
<td>English Skills Lab - 3 credits</td>
<td>3</td>
</tr>
<tr>
<td>RD 80</td>
<td>Reading 80</td>
<td>3</td>
</tr>
<tr>
<td>RD 80A</td>
<td>Reading 80A</td>
<td>3</td>
</tr>
<tr>
<td>RD 81A</td>
<td>Reading 81A</td>
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<tr>
<td>RD 82A</td>
<td>Reading 82A</td>
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</tr>
<tr>
<td>RD 90</td>
<td>Reading 90</td>
<td>3</td>
</tr>
<tr>
<td>RD 90A</td>
<td>Reading 90A</td>
<td>3</td>
</tr>
<tr>
<td>RD 91A</td>
<td>Reading 91A</td>
<td>1</td>
</tr>
<tr>
<td>RD 92A</td>
<td>Reading 92A</td>
<td>2</td>
</tr>
<tr>
<td>RD 95</td>
<td>Reading for Enjoyment</td>
<td>3</td>
</tr>
<tr>
<td>WR 80</td>
<td>Writing 80</td>
<td>3</td>
</tr>
<tr>
<td>WR 80C</td>
<td>Writing 80C</td>
<td>3</td>
</tr>
<tr>
<td>WR 90</td>
<td>Writing 90</td>
<td>3</td>
</tr>
<tr>
<td>WR 90C</td>
<td>Writing 90C</td>
<td>3</td>
</tr>
<tr>
<td>WR 91</td>
<td>Basic Grammar</td>
<td>1</td>
</tr>
<tr>
<td>WR 91A</td>
<td>Basic Grammar</td>
<td>1</td>
</tr>
<tr>
<td>WR 92</td>
<td>Basic Grammar</td>
<td>2</td>
</tr>
<tr>
<td>WR 92A</td>
<td>Basic Grammar</td>
<td>2</td>
</tr>
<tr>
<td>WR 93</td>
<td>Basic Grammar</td>
<td>3</td>
</tr>
</tbody>
</table>

Developmental Mathematics

For developmental and/or pre-college Mathematics courses, see Mathematics (p. 139). Consult the Course Descriptions (p. 139) 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>DE 21</td>
<td>Introduction to Information Literacy</td>
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<tr>
<td>DE 31</td>
<td>Learning Skills I</td>
</tr>
<tr>
<td>DE 50</td>
<td>Vocabulary Building</td>
</tr>
</tbody>
</table>

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 classes meet the same outcomes as on-campus classes 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.
Web classes

Web classes utilize an online learning environment where students work independently through online coursework, which can include text, audio and video content. 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.

First time online students

All PCC students who have not taken an online class at PCC will need to complete the Start Guide for Online Learning before they can register for a credit WEB class. Visit www.pcc.edu/osg for the latest information for new online learners.

English for Speakers of Other Languages (ESOL)

www.pcc.edu/esol

Description

The ESOL Program offers classes for people whose native language is not English. Reading, writing, listening and speaking skills are taught together in Levels 1-3. Separate skill classes in reading, writing and communication are taught in levels 4-8. American culture is stressed in all 8 levels.

ESOL classes are open to adult immigrants and refugees (including U.S. citizens), and international students and visitors who want to improve their English language proficiency. Testing and orientation are required before entering the program.

Course of Study

The ESOL Department offers Basic ESOL (Levels 1-3), Transitional ESOL (Levels 4-5) and Academic ESOL (Levels 6-8). After Academic ESOL, students are ready for RD 115 and WR 115, after which students become eligible to take most college transfer-level classes.

ESOL Levels 1 - 8 serve the needs of adult refugees and immigrants. Levels 4 - 8 also serve the needs of professional personnel working or training in the U.S., international students and international visitors.

ESOL offers both credit and non-credit classes. Levels 1-3 are non-credit classes. Levels 4 and 5 can be taken either as non-credit or college credit classes. Levels 6-8 are credit classes.

Up to twenty-four credits of Level 7 and 8 ESOL courses may be applied to all PCC associate degrees. The cost of an ESOL class ranges from a moderate fee to full college tuition. Each class in Levels 1-3 is designed to take two or three terms to complete. Each class in Levels 4-8 is designed to be completed in one term. All new students must be tested prior to enrollment.

Students should contact the campus where they want to attend to find out about testing. International students should first contact an international student advisor at 971-722-5670 (CA), 971-722-7150 (RC) or 971-722-8310 (SY).

Testing Centers

Cascade Campus
971-722-5234

Southeast Campus

971-722-6277

Sylvania Campus
971-722-4533

Rock Creek Campus
971-722-7523

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.

PCC Links Programs

Southeast Campus
Mt. Tabor Hall (MTH), Room 123
971-722-6293

www.pcc.edu/links

PCC Links Programs, formerly called PCC Prep Alternative Programs, offer educational options to help students complete their education, no matter where they are starting from. Two high school programs offer a variety of options for youth 16-20 years of age who are at risk of dropping out of school or who have already left school without obtaining a high school diploma. Two college programs provide support and scholarship assistance for students who have completed high school and who could benefit from support in completing their college degree.

High School Programs

Gateway to College

www.pcc.edu/gateway

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 committed to their academic success in college.

YES to College

www.pcc.edu/yes

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 to College students may be eligible to transition into college courses and work towards a certificate or degree, with the program covering the cost of college tuition and books.

Students who have a first language other than English start in the YES to College program with ESOL courses. As they improve their English skills in reading, writing and speaking, students can work toward a GED or high school diploma.
In both programs students receive the support of a College Success Coach who acts as an instructor, advisor, and counselor. In both programs, the cost of classes and books are covered. In Gateway to College, students are responsible for class fees each term.

### College Programs

**Future Connect**  
http://www.pcc.edu/future-connect

Future Connect is for recent high school graduates who are either low-income or first-generation college students. Students work closely with a College Success Coach, receive a scholarship to PCC, and have the opportunity to participate in career internships and leadership opportunities.

**Project DEgree**  
http://www.pcc.edu/project-degree/

Project DEgree provides personalized support to college students who place into two or more Development Education classes. Students take classes in a Learning Community that provides them with individualized academic and social supports and offers an engaging project-based curriculum to prepare for college-level coursework.

See also English for Speakers of Other Languages (p. 187) and Developmental Education (p. 186) sections in this catalog for related instruction.

**PACTEC**  
Rock Creek Campus  
Building 5, Room 116  
971-722-7738  
www.pcc.edu/pactec

PACTEC (Portland Area Career and Technical Education Consortium) is an alliance of 11 school districts in Washington and East Columbia 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 high schools students and 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 PCC.

### Prepare for College Programs

**Adult Basic Education (ABE) and General Educational Development (GED)**

Cascade Campus  
Cascade Hall (CH), Room 306  
971-722-5251

Rock Creek Campus  
Building 2, Room 210  
971-722-7539

Southeast Campus  
Scott Hall, Room 106

**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 Development and Community Education
Career Pathways Department
971-722-6271
www.pcc.edu/cp

The Career Pathways Department supports students to complete short-term, stackable credentials that lead to a degree and jobs that offer pathways for advancement. Career Pathways certificates are 12 to 44 credits, can be completed in less than a year, and prepare students for employment in high-growth, high-demand industries while also providing a stepping stone to an associate degree, bachelor degree, and beyond. There are many Career Pathway options to meet the needs of students. Whether students are attending college for the first time, changing career paths, upgrading skills in their field, ESOL, or recent GED or high school graduates, there are pathways to meet their needs.

Career Pathways supports and empowers students to reach their education and career goals through:

- Individualized career and college success coaching
- Free classes and workshops, to promote college success and prepare students for internships and career opportunities
- Connection with internships, job shadows, employer presentations, and job opportunities
- Assistance navigating college resources, the process of becoming a student, and how to pay for college
- Educational advising, to map out students’ options for advancing their career and education over time
- ABS Career Pathways designed for ESOL, GED, or students testing into Math 20, Reading 80/90, and Writing 80/90: ABS Pathways offer students a faster path to gain the skills and college certificates they need to quickly enter the workforce and/or complete their degree. ABS Pathways allow students to build their academic and/or English communication skills while they are taking their college classes, in a format that is relevant to their lives and career goals.

Additional information can be found at www.pcc.edu/cp.

CLIMB Center for Advancement
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 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. CLIMB is a hub of expertise, talent and training opportunities, using trainers who are industry experts and who bring real world experience to participants.

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 industrial/technical trades in most industries. 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; 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 worklife 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, workshops for businesses for succession planing and the transition of retirees, 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
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.

Occupational Skills Training
Southeast Campus
Mt Tabor Hall (MTH), Room 128
971-722-6127
971-722-6124 (fax)

www.pcc.edu/ost

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.

For more information, please see the Occupational Skills Training (p. 161) section of the catalog.

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.

www.bizcenter.org

PCC'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 – pre-start, start-up, pre-growth, growth, maturing, and transition – 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 business advising to create an environment that supports small business owners in achieving their goals. Services include: business concept development programs, business design programs, entrepreneurial skill programs, small business management programs, international trade advising and education, and capital access services.

Community Education
971-722-6266
www.pcc.edu/communityed

PCC Community Education provides hundreds of non-credit personal enrichment classes that feature local experts as instructors and do not involve grades or exams. Classes are offered in five general areas: Arts, Home and Garden, Language and Culture, Recreation and Wellness, and Work and Life Balance. Educational travel programs are also offered in addition to the programs listed below.

Most Community Ed classes are designed for adults (age 16 and over) and are typically offered during evenings or on weekends to accommodate busy personal schedules. Classes are offered at PCC campuses and centers, in neighborhood locations throughout the Portland metro area, and online at www.pcc.edu/online.

Non-credit classes do not meet the federal requirements for financial aid and most Veteran's benefits, are not equivalent to credits and may not be used toward PCC certificates and degrees.

Continuing Education and License Renewal
Community Ed provides Continuing Education courses which offer CEU credit used for professional licensure renewal and preparation for taking the next step in one's career. Class formats feature in-person, hands-on learning opportunities from industry experts. Visit www.pcc.edu/career for more information.

Traffic Safety
Community Ed offers ODOT approved Driver Education for teens and adults. Drivers Ed classes are available at many PCC campuses and centers and area high schools. Visit www.pcc.edu/drive for more information. ODOT required motorcycle rider safety training courses are also offered in cooperation with TEAM OREGON. Visit https://team-oregon.org/ or call 800-545-9944 for more information.

Summer Teen Program
Additionally, Community Ed offers dedicated summer term classes for teens (age 12-17) through the Summer Teen Program. Visit www.pcc.edu/community/teen for more information.

Swim with Community Ed
Community Ed also offers youth, adult, and parent/child swim classes through the Swim with Community Ed program. Classes are based on American Red Cross curriculum and offer a positive learning experience with low student-to-teacher rations. Visit www.pcc.edu/community/swim for more information.
The Rapid Response Program, which begins working directly with employers and employees when a pending layoff or closure is announced to minimize the impact of job loss.

Through these programs the WorkSource Centers offer:
Services to job seekers including: a career center with computers, printers and fax machines for job searches; job listings; job search workshops; career counseling; assessment and testing; computer classes; Adult Basic Education; work experience opportunities, English as a Second Language classes and career technical 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.
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. PCC recommends that students first attempt to repair their transcripts by repeating a course for a higher grade as appropriate through the college's Repeat Policy.
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. Students may only use Academic Fresh Start once and only if they have 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 they satisfy 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 http://catalog.pcc.edu/handbook/c102-coursechallenge/.

Grading Guidelines

Roles and Responsibilities

1. Students shall be responsible for reading about and selecting a grading system option for each class they take at PCC as a condition of completing their registration for classes either on-line or in-person.
2. Students shall be responsible for ensuring the accuracy of their final grades on their Academic Transcripts.
3. Students shall be responsible for reading about and making any permitted changes to their grading system option 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 excellent attendance.
3. Probable continued success in sequential courses.

C Average
1. Standard college grade indicating successful performance earned as a result of a combination of some or all of the following as outlined by the Instructor in the course handout: satisfactory examination scores, generally accurate and prompt completion of assignments, ability to deal with abstract ideas, fair mastery of pertinent skills, and regular attendance.
2. Sufficient evidence of ability to warrant entering sequential courses.

D Substandard but receiving credit
1. Substandard grade indicating the Student has met only minimum requirements as outlined by the Instructor in the course handout.
2. Earned as a result of some or all of the following: low examination scores; generally inaccurate, incomplete or late assignments; inadequate grasp of abstract ideas; barely acceptable mastery of pertinent skills; irregular attendance; insufficient evidence of ability to make advisable the enrollment in sequential courses.
3. Does not satisfy requirements for entry into courses where prerequisites are specified.

F Failure
1. Non-passing grade indicating failure to meet minimum requirements as defined by the instructor in the course handout earned as a result of some or all of the following: non-passing examination scores; inaccurate, incomplete or late assignments; failure to cope with abstract ideas; inadequate mastery of pertinent skills; and repeated absence from class.
2. Does not satisfy requirements for entry into courses where prerequisites are specified.
3. Faculty must record the last date attended for students that earn an F.

P Pass
2. A grade of P represents satisfactory achievement which would have been graded C or better under the traditional grading system.
3. The P grade is disregarded in the computation of the PCC grade point average.
4. This grade is available only when a student has selected the pass/no pass grade system option during the first 80% of a course's term.

NP No Pass
1. Unacceptable performance.
2. A grade of NP represents unsatisfactory achievement which would have been graded D or lower under the traditional grading system.
3. The NP grade is disregarded in the computation of the grade point average.
4. Faculty must record the last date attended for students that earn an NP.
5. This grade is available only when a student has selected the pass/no pass grade system option during the first 80% of a course's term.

Mark Definitions

SC Satisfactory Completion
The mark used when a student satisfactorily completes continuing education units (CEUs).

NSC Not Satisfactory Completion
The mark used when a Student does not satisfactorily complete continuing education units (CEUs).

I Incomplete
1. At the time final course grades are recorded, the instructor may, with the consent of the student, record an "I" mark and grant additional time for the completion of a minor but essential requirement for the student who is otherwise making satisfactory progress.
2. This shall only be done by signed written agreement with a requesting student and a copy shall be left on file with the division administrative staff.
3. Such written agreements shall describe the missing requirement, the basis for the requirement’s evaluation, the effect 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 effect 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
AUD (Audit) on the transcript unless the course was repeated and a
grade earned.

CIP Course in Progress
1. A mark used only for designated classes in modular or self-paced
programs that do not conform to the normal academic calendar.
2. If the course is not completed within a year, the CIP changes to 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.

Time periods referring to “published drop deadlines” and “published
withdrawal deadlines” are different for each term.

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 a 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/transfer/credit. After evaluation the non-traditional credit will be recorded on the student’s transcript. Only 25% of a degree’s or certificate’s credits can come from non-traditional credit.

PCC will evaluate the following for non-traditional credit: 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 CLEP credit may be used to satisfy General Education requirements.

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: ctep.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. 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 degree-seeking students who are not making satisfactory academic progress will be provided the opportunity to access services and resources designed to support learning and achievement of academic goals.

Individuals not making satisfactory academic progress, as defined in this policy, may be denied early registration opportunities or continued admission. Students failing to meet the Standards of Satisfactory Academic Progress (SAP) shall be alerted by the College and provided information regarding resources, as well as procedures designed to support improved academic performance.

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
www.pcc.edu/transfercredit

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 Lower Division Collegiate (LDC) and Upper Division Collegiate (UDC) 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. 34). 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. 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, 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.

International Coursework
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.

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/.

Transfer Credit and VA Benefits
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.
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
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, 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
     • Tobacco-Free Policy. See: http://www.pcc.edu/about/policy/tobacco/rules-procedures.html
     • Service Animal Policy and Procedures. See: http://www.pcc.edu/resources/disability/policies/service-animals.html
     • PCC Copyright Compliance Statement. See: http://www.pcc.edu/about/policy/copyright/compliance.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 will 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.

IN VOLUNTARY 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 faculty and staff have with students. These relationships are intended to foster free and open exchange of ideas, productive learning, and the work that supports it.

In addition, those who supervise or evaluate the work of students must be perceived to be making their decisions fairly and without favoritism. This mission is potentially jeopardized when faculty/staff enter into consensual romantic relationships with their students.

Faculty and staff are cautioned that consensual romantic relationships with their students can prove to be unwise and problematic, and should be avoided. When consensual romantic relationships occur, questions of fairness, favoritism, and coercion arise:

- Relationships in which one party is in a position to review the work, or influence the career of the other may provide grounds for complaint when that relationship appears to give undue access or advantage, restricts opportunities, or creates a hostile and unacceptable environment for others.
- Such relationships may undermine the real or perceived integrity of the supervision provided, and the particular trust inherent in the student-faculty relationship.
- Such relationships may, moreover, be less consensual than the individual whose position confers power believes. The relationship is likely to be perceived in different ways by each of the parties to it, especially in retrospect. While some relationships may begin and remain harmonious, they are susceptible to being characterized as unprofessional and disrespectful to others.

Therefore, faculty/staff should not engage in consensual romantic relationships with their current students.

If a faculty or staff member has a pre-existing consensual romantic/sexual relationship with a student, the student should be discouraged from enrolling in courses taught by the instructor or entering into work situations in which she/he would be supervised by the staff member. If the student does enroll in the course or work for the staff member, the faculty/staff member should remove him/herself from academic or professional decisions concerning the student.

Should a romantic/sexual relationship between a faculty/staff member and his/her student lead to a sexual harassment charge, the College is obligated to investigate and resolve the charge in accordance with the complaint procedure in the Non-harassment Policy.

Copyright Compliance Statement
http://www.pcc.edu/about/policy/copyright/compliance
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

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 that apply to Student Records. The Family Educational Rights and Privacy Act of 1974 (Statute: 20 U.S.C. 1232g; Regulations: 34CFR 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 review an educational record in order to fulfill his/her professional responsibilities.
- The right to file a complaint with the Department of Education, Family Compliance Office, concerning alleged failures by the college to comply with the requirements of FERPA.

Note: PCC does not have any directory information. Therefore, all information about a student is kept confidential and not released without express written consent of the student (except when consent is not required by FERPA). While PCC does not have any directory information, the college may contact a student via the phone and mailing address provided by the student, and may leave a voice mail at the provided number.

Note: FERPA rights belong to the PCC student, regardless of the student’s age.

Questions about these policies can be directed to the College Registrar and the Student Records Office at 971-722-7100

Solomon Act

Federal law requires PCC to provide student name, address and telephone number to the military for recruiting purposes.

Communication Policy (MyPCC and PCC E-mail)

Portland Community College will use electronic communication methods to conduct official and legal college business. Communication to PCC employees and students via electronic communication methods will speed the delivery of information. Every student and employee is given the appropriate account(s) to access these communications.

Recipients will be expected to read all electronic communication related to PCC business and when necessary take action as a result of communications received from the College. It is expected that students
and employees will monitor their college electronic accounts often to receive the most up-to-date information from the College.

Grade Appeal Procedure

PURPOSE
As set forth in PCC’s Policy on Student Rights, students have the Right to Protection from Improper Academic Evaluation. The Grade Appeal Procedure provides the student with a process for appealing a final course grade when he or she believes that an improper evaluation has occurred. "Improper evaluation" is defined as 1) the evaluation standards and grading criteria contained in the course syllabus were not followed by the instructor or 2) the final grade was imposed in an arbitrary or capricious manner.

SCOPE
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, 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 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/documents/grade-appeal.pdf

B. The Dean of Student Development or designee will review the Grade Appeal Form and determine the next steps, which may include, 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/SCOM 116
Tel. 971-722-6152
Email: dos.sc@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 reasoned 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, use of native language, national origin, sex, marital status, height/weight ratio, disability, veteran status, age, or sexual orientation in any area, activity, or operation of 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/equity-inclusion/complaint-form/.

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 (“ASPCC”) constitution and campus bylaws, and the right to carry out fund-raising activities for these clubs. All fund-raising activities for ASPCC 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 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

Further information on confidentiality in counseling services may be found at: http://www.pcc.edu/resources/counseling/

Further information on PCC’s Privacy Policies may be found at: http://www.pcc.edu/about/policy/privacy.html
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 1,350,000 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 87,000 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, the school board appointed an advisory council in 1965 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 Portland and its entire surrounding communities. 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 the 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 its three comprehensive campuses (Sylvania, Cascade and Rock Creek) 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, also funded by the 2008 bond measure, began offering classes in its temporary space in fall 2010. Its permanent site opened in fall 2011, providing Yamhill County with a 12,000 square-foot education and community space. It is recognized as one of the most sustainable educational buildings in the nation, with solar panels, natural cooling and heating systems and natural lighting. During the 2011-2012 school year, PCC celebrated its 50th year of serving local communities with celebrations across the district, recognition of 50 distinguished alumni, and the accomplishment of 50,000 hours of community service work. In 2014, the college championed both the transformation of the Southeast Campus into its fourth comprehensive campus, and the opening of the Swan Island Trades Center, which helps to coordinate continuing education, training, retraining and professional development for Swan Island businesses.

Mission Statement

Portland Community College supports student success by delivering access to quality education while advancing economic development and promoting sustainability in a collaborative culture of diversity, equity and inclusion.

To fulfill its mission, the college focuses on these core themes:

• Access and Student Success
• Economic Development and Sustainability
• Quality education
• Diversity, Equity and Inclusion

PCC Locations

The college has four comprehensive campuses that provide lower-division college transfer courses, two-year associate degree programs and career/technical training programs. 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’s degree and a wide array of career/technical degree and certificate offerings.

**Rock Creek Campus**
Campus President: Sandra Fowler-Hill
17705 NW Springville Road
Portland, OR 97229-1744
www.pcc.edu/rockcreek

While Rock Creek has a Portland address, it sits about 12 miles west of downtown in the rapidly growing Beaverton-Hillsboro area of Washington County. The 256-acre campus provides a beautiful setting for both college transfer and career/technical programs and annually serves nearly 23,600 students. The campus provides a model for partnerships with area high schools. A newly constructed 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 its 11,100 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: Lisa Avery
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 PCC’s first campus as well as its largest, serving approximately 30,000 students annually, and is home for numerous PCC lower division transfer, career technical education and developmental education programs. The library and theater facilities are focal points 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 central eastside Portland. CLIMB, which stands for Continuous Learning for Individuals, Management and Business, offers continuing education and professional training for health professionals, small business owners, managers and work teams. The center provides access to a broad range of training areas and facilities that meet the latest in industry standards and technical capabilities.

**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 also are offered. English for Speakers of Other Languages (ESOL) classes are scheduled throughout the year. 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 2011, 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 Technology.

**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, which include Steps to Success, Dislocated Worker and Metro One Stop, provide a comprehensive array of employment and training. Instruction is available in Adult Basic Education, ESOL, 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.

**Swan Island Trades Center**
6400 N Cutter Circle
Portland, OR 97217
www.pcc.edu/swan-island/

The Swan Island Trades Center is a 20,000-square-foot facility housing the College’s Apprenticeship and Trades department. The Center and nearby Cascade Campus, along with expertise from PCC’s CLIMB Center for Advancement, coordinate continuing education, training, retraining and professional development for Swan Island businesses.
at this location. Offered at Swan Island are the Facilities Maintenance Technology two-year degree; Facilities Maintenance Technology and HVAC Installers certificates; Millwright, Industrial Mechanics, Limited Maintenance Electrician, Manufacturing Plant Electrician and Stationary Engineer apprenticeships; and the Limited Building Maintenance Electrician training program.

PCC bought the former Oregon Motor Pool Facility in 2010 with a vision of creating a trades facility within the industrial core of Swan Island to meet the needs of the businesses in the area. In 2012, the State Legislature authorized $1 million to go toward construction of the PCC center in addition to the $3.6 million earmarked from PCC’s 2008 voter-approved $374 million bond.

Willow Creek Center

241 SW Edgeway Drive
Beaverton, OR 97006
www.pcc.edu/willowcreek

The Willow Creek Center (near 185th and Baseline Road) in Washington County 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.

PCC Contracted Educational Service Districts

Oregon Coast Community College
400 SE College Way
Newport, OR 97366
541-265-2283

PCC Core Outcomes

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 approximately 80,000 students through credit and noncredit instruction in 2015-2016. The following reflect characteristics of students enrolled in the fall 2015 term.

<table>
<thead>
<tr>
<th></th>
<th>Credit</th>
<th>Non-Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td>Female</td>
<td>54%</td>
<td>61%</td>
</tr>
<tr>
<td>Male</td>
<td>46%</td>
<td>39%</td>
</tr>
<tr>
<td>Caucasian</td>
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<td>63%</td>
</tr>
<tr>
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<td>5%</td>
</tr>
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<td>1%</td>
</tr>
<tr>
<td>Alaskan Native</td>
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<td></td>
</tr>
<tr>
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<td>8%</td>
<td>10%</td>
</tr>
<tr>
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<td>&lt;1%</td>
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<tr>
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<td>4%</td>
</tr>
<tr>
<td>Multi-Racial</td>
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<td>3%</td>
</tr>
</tbody>
</table>

Students Right to Know

In the fall term of 2012, 1,155 first time, full time, certificate or degree seeking students entered PCC. After three years, 15% of the students had graduated from PCC. Among those who did not graduate, 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
(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 GYM 101
971-722-5513

The PCC Foundation

Sylvania Campus
College Center (CC), Room 221
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

2016-2017

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MA, Counseling Psychology, Pacific University, OR  

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Mgr/Student Account System  
BS, Business Administration, Univ of Phoenix - Main, AZ  
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Allen, Ray A.  
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BA, East Asian Studies, University of Oregon, OR  

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MA, Teaching and Learning, U of CA-San Diego (UCSD), CA  

Altree, Larry E.  
Instr/Aviation Sci  
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Boggs, Mike A.
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BS, Exercise and Sport Science, Oregon State University, OR
MBA, Technology Management, *University of Phoenix

Bonifacino, Alejandra
<table>
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<tr>
<th>Name</th>
<th>Title/Field</th>
<th>Education &amp; Experience</th>
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<tr>
<td>Booker, Nicole L.</td>
<td>Instr/World Lang/Spanish</td>
<td>MA, Spanish, University of Oregon, OR</td>
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<tr>
<td>Booker, Tonya S.</td>
<td>Dir/Community Ed</td>
<td>BS, Forestry, U of IL @Urbana-Champaign, IL</td>
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<td>MA, Liberal Arts, Stanford University, CA</td>
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<td>Borzcik, Ragan L.</td>
<td>Instr/Vet Tech</td>
<td>BS, Pre-Veterinary, Oregon State University, OR</td>
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<td>DVM, Veterinary Medicine, Oregon State University, OR</td>
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<td>Bosland, Aimee C.</td>
<td>Vocational Trainer</td>
<td>BS, Health Studies: Community, Portland State University, OR</td>
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<td>Bouse, Misty H.</td>
<td>Major Gifts Officer</td>
<td>BA, Advertising, University of Oregon, OR</td>
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<td>Boyd, Leslie K.</td>
<td>Instr/Dev Ed</td>
<td>BA, English, Montana U Sys Off, MT</td>
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<td>MA, Teaching:English, Portland State University, OR</td>
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<td>Boyd, Rhonda M.</td>
<td>Title III Project Director</td>
<td>BA, Elementary Education, Graceland University, IA</td>
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<td>MED, Educational Leadership, University of Nevada/Reno, NV</td>
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<td>Boyd-Bunch, Merry L.</td>
<td>Spec/Learning Skills</td>
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<td>Boyle Galestiantz, Traci R.</td>
<td>Staff &amp; Org1 Dev Facilitator</td>
<td>BS, Women's Studies, Portland State University, OR</td>
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<td>MSW, Social Work, Portland State University, OR</td>
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<td>Bradbury Jones, Mary</td>
<td>Dir/Program CLIMB Prof Dev Trn</td>
<td>BA, Communication Studies, U Kansas, KS</td>
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<td>MA, Human Resources, Webster University, MO</td>
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<td>Bradley, Kevin M.</td>
<td>Mgr/WorkforceDevProg</td>
<td>BS, Business Administration, Warner Pacific College, OR</td>
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<td>MS, Educational Leadership &amp; Polic, Portland State University, OR</td>
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<td>Coord/Culinary Asst Prog</td>
<td>BS, Health Studies: Community, Portland State University, OR</td>
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<td>Brand, Tricia D.</td>
<td>Associate Dean/Student Develop</td>
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<td>MED, Learning, Cognition &amp; Develop, Rutgers St U-New Brunswk, NJ</td>
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<td>Instr/Paralegal</td>
<td>BA, Social Science, N Illinois U, IL</td>
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<td>JD, Law, Univ North Dakota/Main Camp, ND</td>
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<td>Brenneis, Valance E.</td>
<td>Instr/Biology</td>
<td>BA, Biology, U of California/Berkeley, CA</td>
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<td>MED, Secondary Education, George Washington U, DC</td>
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<td>PHD, Ecology, U of California/Davis, CA</td>
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<td>Brewster, Elizabeth</td>
<td>Instr/Landscape</td>
<td>BA, Humanities, U of S Florida, New College</td>
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<td>BS, Horticulture, U Maryland C Park, MD</td>
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<td>Bridgewater, Rachel A.</td>
<td>Ref Librarian</td>
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<td>Briggs, Jon J.</td>
<td>Instr/Biology</td>
<td>BM, Music, U South Florida, FL</td>
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<td>Briggs, Nancy C.</td>
<td>Instr/Biology</td>
<td>BS, Biology, Portland State University, OR</td>
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<td>MS, Biology, Portland State University, OR</td>
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<td>Brist, Brittany L.</td>
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<td>BA, Sociology, Portland State University, OR</td>
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<td>MS, Educational Policy/Leadership, Portland State University, OR</td>
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<td>Broich, Regina C.</td>
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<td>Brooks, Chris D.</td>
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<td>MA, History, U of CA/Santa Cruz, CA</td>
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<td>PHD, History, U of CA/Santa Cruz, CA</td>
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<td>Brown, Ken L.</td>
<td>Mgr/Bookstores</td>
<td>MBA, Business Administration, Portland State University, OR</td>
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<td>Brown, Michelle D.</td>
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<td>BS, Public Management, Colorado St U-Global Cam, CO</td>
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<td>Brown, Noreen N.</td>
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<td>Brown, Sheila G.</td>
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<tr>
<td>Browning, Linda M.</td>
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DMD, Dentistry, Oregon Health Science U, OR
MS, Healthcare Management, Oregon Health Science U, OR

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BA, Social Science, U Minnesota Cntl Off, MN
MA, Marriage & Family Therapy, Notre Dame U, CN

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Supv/IT - Data Center Ops
AAS, Computer Information Systems, Portland CC, OR
BS, Information Tech, Oregon Inst of Technology, OR

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BA, Literature, New College of Florida, FL

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BS, Social Science, Portland State University, OR
BS, Speech Communication, Portland State University, OR
CERT, Black Studies, Portland State University, OR
MPA, Public Admin, Portland State University, OR

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Instr/Interior Design
BFA, Studio Arts, U Colorado Boulder, CO
MAR, Interior Architecture, University of Oregon, OR
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Counselor
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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Coord/Comm Ed Program
BS, Zoology, Ohio St U Main Cam, OH
MSE, Ed Policy, Foundation & Admin, Portland State University, OR

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Coord/Employment Spec
BS, Psychology, Oregon State University, OR

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BS, Mathematics, Alabama St U, AL
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AA, Business Technology, Central Oregon CC, OR
BA, Management and Org Leadership, George Fox University, OR
MBA, Business Administration, Corban University, OR

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BA, Russian, University of Arizona, AZ

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BA, Economics, U Missouri Kansas City, MO
MA, Economics, U Missouri Kansas City, MO

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Dir/Bond Program
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MPA, Public Admin, Portland State University, OR

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BS, Biology, Portland State University, OR
PHD, Environ Sciences & Resources, Portland State University, OR
PHD, Biology, Portland State University, OR

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Coord/ Fin Aid
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MA, Tesol, Sch Inetrnatl Training, VT

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Coord/Dual Credit
BA, Business Administration, Hamline U, MN
BA, International Relations, Hamline U, MN
MA, Gifted Creative & Talented Ed, U St Thomas, MN

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MED, Mathematics, Leningrad A I Herzen Inst, RU

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MA, Applied Linguistics, Georgia St U, GA
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BA, Political Science, Gonzaga University, WA
MA, English, Eastern Washington U, WA
MA, Rhetoric and Composition, Eastern Washington U, WA

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BS, Physics, Western Washington Univ, WA
MS, Physics, U Colorado Boulder, CO
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BS, Biology, Towson University, MD

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MS, Entomology, U of California/Davis, CA

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BS, Biochemistry, Western Washington Univ, WA
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MSW, Social Work, Portland State University, OR

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ZDCH, Chiropractic Medicine, Palmer Clg of Chrprctc/West, CA

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Dir/Outreach, Or, Enrlmt Serv
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BA, Philosophy, The Evergreen St College, WA
MA, Human Development, Pacific Oaks College, CA
PHD, Human Services, Walden University, MN

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International Stndnt Advisor

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BA, History, U Kansas, KS
BA, Latin American Studies, U Kansas, KS
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Instr/Bldg Construction Tech
BA, English, Brigham Young University, UT
BA, History, Brigham Young University, UT
MA, History, Portland State University, OR

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Instr/Prof Music
MM, Music Composition, Florida State University, FL
DM, Music Composition, Florida State University, FL

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MAED, Human Resources, University of Findlay, OH

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BS, Biology, University of Puget Sound, WA

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BA, Philosophy, Valdosta State University, GA
BA, Sociology/Anthropology, Valdosta State University, GA
PHD, Sociology, University of New Mexico, NM

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Instr/Mech Eng
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MS, Environmental Engineering, Michigan Technological Univ, MI

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MS, Counseling, University of Oregon, OR

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BA, Interior Architecture, University of Oregon, OR

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Coord/Retention Multicultural
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MA, Organizational Leadership, Gonzaga University, WA

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BA, Spanish, University of Oregon, OR
MS, Ed Policy, Foundation & Admin, Portland State University, OR

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MA, Psychology, Fielding Graduate Univ, CA

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BA, Writing, Johns Hopkins U, MD
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BBA, Marketing, U Wisconsin Madison, WI
BBA, Mgmt Of Human Resources, U Wisconsin Madison, WI
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MA, Instructional Systems Develop, Univ of Maryland Baltimore, MD

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Coord/Resource Ctr
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BS, Electrical Engineering, Boise State University, ID
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BS, Information Systems, Georgia Inst Tech Main, GA
MA, Computer Science, Brandeis U, MA
PHD, Computer Science, Brandeis U, MA

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BA, Anthropology, University of Montana, MT

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Spec/Transport Demand Mgmt

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BA, Social Studies, Western Washington Univ, WA
MS, Educational Policy Found & Adm, Portland State University, OR

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MAR, Architecture, Arizona State Univ. Main, AZ

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AA, Undeclared, Portland CC, OR
BA, History, Portland State University, OR
MA, History, Portland State University, OR

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BS, Information Systems, Portland State University, OR
MS, Writing, Portland State University, OR

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MS, Sociology, Portland State University, OR

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BM, Music, Rice U, TX
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MED, Instructional Technology, American Intercontinental U, IL

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MN, Family Nurse Practitioner, Washington St University, WA

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Instr/World Lang/Spanish
BA, Economics, University of Puget Sound, WA
BA, Spanish, University of Puget Sound, WA
MA, Romance Languages and Lit, University of Washington, WA

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Coord/Women's Resource

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Asst Coord/Stdnt Ldrshp
BA, Management and Org Leadership, George Fox University, OR
MS, Ed Policy,Foundation & Admin, Portland State University, OR
ACERT, Student Affairs in Higher Ed, Portland State University, OR

Martinez-Alicea, Rut R.
Coord/Retention Multicultural
BA, Psychology, U Puerto Rico Rio Piedras Pie

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Online Development Facilitator

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Dir/Instit Effectiveness
BBA, General Business, Univ. of North Texas, TX
MBA, Management Science, Univ. of North Texas, TX

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Instr/Nursing
BSN, Nursing, University of Portland, OR
MS, Nursing, University of Portland, OR

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Maxwell, Michele L.
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AB, Linguistics, Univ Michigan - Ann Arbor, MI
MBA, International Business, Boston C, MA

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Program Officer
BA, Music, Pacific University, OR
MA, Music, University of Portland, OR

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Instr/Psych
BA, Political Science, CA Polytechnic-San Luis Ob, CA
MA, Social Ecology, U of California/Irvine, CA

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Spec/Student Res
BS, Communication Studies, Portland State University, OR
MS, Communication Studies, Portland State University, OR

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Instr/Dev Ed/ABE
BS, Political Science, Portland State University, OR
MS, Educational Policy Found & Adm, Portland State University, OR

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Spec/Marketing
BS, Psychology, Lewis & Clark College, OR

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BS, Nursing, Walla Walla University, WA
MN, Nursing Education, OHSU School of Nursing

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BS, Nursing, Oregon Health Science U, OR
MS, Adult Health & Illness, Oregon Health Science U, OR

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MA, Counseling Psychology, Lewis & Clark College, OR

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Mgr/IT - Customer Suppt
AGEN, General Studies, Portland CC, OR
AS, Transfer Program, Portland CC, OR

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Coord/Resource Ctr
BA, English, U of California-Santa Barb, CA
MS, Career Counseling, California St U-Northridge, CA

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Mgr/Trans & Pkg Srvcs
BA, Philosophy, University of Utah, UT
BA, Psychology, University of Utah, UT
MS, Geography, University of Utah, UT

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Video Producer

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BS, Zoology, University of Washington, WA
MS, Zoology, Colorado State University, CO

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Div Dean
MS, Biology, Howard University, DC

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BS, Kinesiology, San Diego State University, CA
MS, Physical Education, Azusa Pacific University, CA

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BA, English, Colby C, ME
BA, Russian, Colby C, ME
MA, Intercultural Relations, Antioch College OH

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Instr/Health
BS, Biology, SUNY Col at Geneseo, NY
MPH, Health Promotion, Portland State University, OR

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BS, Biology, Prairie View A& M U, TX
MPH, Public Health, Armstrong St C, GA
DNP, Naturopathic Medicine, Nat Coll Naturopathic Med, OR

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BS, Psychology, Eastern Oregon University, OR

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BM, Music, University of Arizona, AZ
MM, Music, University of Arizona, AZ

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Instr/Math
MS, Mathematics, Northern Arizona University, AZ

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BM, Music Education, U N Iowa, IA
MBA, Business Administration, U Iowa, IA

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Instr/Dev Ed/Engl
BA, Filmmaking, Bard C, NY
MA, Teaching English to Others, Portland State University, OR

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BS, Mechanical Engineering, Santa Clara University, CA
MS, Mechanical Engineering, Georgia Inst Tech Main, GA

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MA, English as a Second Language, University of Arizona, AZ

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BS, Psychology, Pacific University, OR
ACERT, Optical Technology, Portland CC, OR
AAS, Optical Technology, Portland CC, OR
MS, Education, Portland State University, OR
MS, Psychology, Portland State University, OR

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MA, Human Development, Pacific Oaks College, CA

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BS, Physics, Saratov State Univ
MS, Physics, Saratov State Univ
PHD, Physics, Saratov State Univ
MS, Environmental Science, Oregon Graduate Institute, OR

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AA, Social Science, County C of Morris, NJ
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BA, Spanish, Washington St University, WA
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AA, University of Montana, MT
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BS, Education, University of Texas El Paso

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BA, Computer Science, Western Oregon University, OR
MS, Interdisciplinary Studies, Western Oregon University, OR

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BFA, Studio Arts, U Colorado Boulder, CO
MFA, Ceramics, Alfred U, NY

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BA, French, U of California/Berkeley, CA
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BM, Music Performance, University of Oregon, OR
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BA, Behavioral Science, George Fox University, OR
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BA, French, University of Oregon, OR

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Spec/Employment

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BA, Business Administration, Washington St University, WA

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BS, Biology, University of San Francisco, CA
BS, Environmental Science, University of San Francisco, CA
MS, Entomology, U Wisconsin Madison, WI
PHD, Entomology, U Wisconsin Madison, WI

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BA, Cultural Studies, University of NV/Las Vegas, NV

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BA, Speech Communication, Purdue University, IN
MA, Speech Communication, Purdue University, IN
PHD, Speech Communication, U of IL @Urbana-Champaign, IL

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MST, Physical Education, Portland State University, OR

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MLS, Library and Info Science, San Jose State University, CA

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MA, Education, Chapman University, CA

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BA, Linguistics, U of CA/Santa Cruz, CA
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BA, Philosophy, C William & Mary, VA
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AAS, Aviation Maintenance Techno, Spokane CC, WA
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BS, Human Devl & Family Studies, Oregon State University, OR
MED, College Student Servcs Admin, Oregon State University, OR

Redmond, Sonya L.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Role</th>
<th>Education and Professional Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instr/Math</td>
<td></td>
<td>BS, Mathematics, Portland State University, OR&lt;br&gt;MA, Liberal Arts, Sarah Lawrence C, NY&lt;br&gt;MA, Liberal Studies, Reed College, OR</td>
</tr>
<tr>
<td>Reskin, Irene L.</td>
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<td>BA, Psychology, Montclair St C, NJ&lt;br&gt;MS, Applied Psychology, Stevens Inst Tech, NJ</td>
</tr>
<tr>
<td>Reynolds, Dennis</td>
<td>Instr/Math</td>
<td>BS, Mathematics, U of Texas - San Antonio, TX&lt;br&gt;MS, Mathematics, U of Texas - San Antonio, TX</td>
</tr>
<tr>
<td>Reynolds, Jennifer M.</td>
<td>Supv/Bookstore</td>
<td></td>
</tr>
<tr>
<td>Richards, Roberta M.</td>
<td>Ref Librarian</td>
<td>MA, Religion, Vanderbilt U, TN&lt;br&gt;MLS, Library Science, Emporia State University, KS</td>
</tr>
<tr>
<td>Richardson, Roxanne L.</td>
<td>International Stdtnt Advisor</td>
<td>AA, Oregon Transfer, Portland CC, OR&lt;br&gt;BS, Social Science, Portland State University, OR&lt;br&gt;CERT, Teaching Adult Learners, Portland State University, OR&lt;br&gt;MS, Ed Policy, Foundation &amp; Admin, Portland State University, OR</td>
</tr>
<tr>
<td>Ricks-White, James M.</td>
<td>PAC Rental/Tech Coord</td>
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<tr>
<td>Riker, Jon L.</td>
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</tr>
<tr>
<td>Rink, Doris G.</td>
<td>Instr/Nursing</td>
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</tr>
<tr>
<td>Ritchie, Ariana C.</td>
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<tr>
<td>Ritchie, Don N.</td>
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<tr>
<td>Ritson, Peter I.</td>
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<tr>
<td>Rivas, Ish D.</td>
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<tr>
<td>Roberts, Prudence F.</td>
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<tr>
<td>Robertson, Sara W.</td>
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<td>Robinson, Rebecca W.</td>
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<tr>
<td>Rodriguez Garcia, Luis E.</td>
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<tr>
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<tr>
<td>Ross, Rebecca M.</td>
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MS, Computer Science, Portland State University, OR

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Instr/Comp & Lit
BA, English, Whitman College, WA
MA, English, Claremont Grad Sch, CA

Savage, Megan E.
Instr/Comp & Lit
BA, Literature, Bard C, NY
MA, English, Indiana U Bloomington, IN
MFA, Creative Writing, Indiana U Bloomington, IN

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, Willamette University, OR
Schmitt, Loraine P.  
Dean/Distance Ed  
MED, Adult Education (ABE or GED), Oregon State University, OR

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, Jim P.  
Instr/Chem  
MS, Materials Science and Engr, U Wisconsin Madison, WI  
MS, Chemistry, U Wisconsin Madison, WI

Schneider-Anthony, Monica H.  
Instr/Psych  
BS, Occupational Therapy, W Michigan U, MI  
MA, Counseling, Ball St U, IN  
PSYD, Industrial Psychology, U.S. International U, CA

Schoon, 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, Hank  
Division Mgr/IT  
BS, Biology, Dartmouth C, NH  
MS, Indust & Operations Engineer, Univ Michigan - Ann Arbor, MI

Schroeder, 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, Matt J.  
Instr/Welding  
AAS, Welding Technology, U Alaska Anchorage CC, AK  
BS, Education, Northern Arizona University, AZ

Scott, Torie 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, Phil A.  
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BS, Transportation and Logistics, University of Oregon, OR  
MBA, Business, Columbia Univ, City of N Y, NY

Seery, Nicole M.  
Asst Coord/Stdnt Ldrship  
BA, Social Science, Western Oregon University, OR

Semura, Patricia M.  
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BED, Speech, U Hawaii Manoa, HI  
MA, Speech, U Hawaii Manoa, HI

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Spec/Acad Advising  
BA, Marketing, Portland State University, OR  
BA, Advertising, Portland State University, OR  
BA, Chinese, Portland State University, OR  
MBA, International Business, Portland State University, OR

Seymour, Chris L.  
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BA, Fine Arts, Georgetown U, DC

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Coord/Student Conduct & Ret

Shapiro, Robin  
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BA, English, U South Florida, FL  
MLS, Library Science, U N Carolina - Chapel Hill, NC

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Instr/Trades and Industry  
AGEN, General Studies, Yakima Valley CC, WA  
BBA, Management, American Intercontinental U, IL  
MED, Instructional Technology, American Intercontinental U, IL

Shaw, John M.  
Instr/His  
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.  
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BS, History, Portland State University, OR  
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BA, Biology, Wittenberg U, OH  
BSN, Nursing, Northwestern U, IL  
MS, Nursing, Oregon Health Science U, OR

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BA, English, Loyola Marymount University, CA

Shields, Carol L.  

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BA, Psychology, Lafayette C, 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

Silverstone, Nicky J.
Spec/Employment
BA, European Studies, U of East Anglia, Norwich, UK

Simmons, Traci R.
Associate Dean/Student Develop
AS, Transfer Program, Portland CC, OR
BS, Health Studies: Community, Portland State University, OR
BS, Health Science, Portland State University, OR
MED, Educational Leadership, Concordia 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, University of Pittsburgh, PA

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Instr/Math
BS, Mathematics Education, Michigan State University
MS, Mathematics, Portland State University, OR

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Instr/Art
BA, Art, San Francisco State U, CA
MFA, Printmaking, Pratt Inst, NY

Sin, Lap Man
Spec/Apprenticeship & Training

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, Doug C.
Instr/Fire Protection Tech
AAS, Automotive Technology, Oregon Inst of Technology, OR
ZBTA, Oregon Inst of Technology, OR
AAS, Fire Protection Technology, Portland CC, OR

Smith, Frank E.
Coord/Dual Credit
AAS, Transfer Program, Portland CC, OR
BS, Sociology, Portland State University, OR
MA, Sociology, New Mexico St U Main Cam, NM

Smith, Jodie K.
Supv/Bookstore
BA, Business Administration, Warner Pacific College, OR

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Instr/Sociol
BA, Sociology, Whitman College, WA
MA, Sociology, Indiana U Bloomington, IN
PHD, Sociology, Indiana U Bloomington, IN

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Instr/Vis Arts
BS, Art, Western Oregon University, OR
BFA, Art, Cooper Union, NY
MFA, Painting, Portland State University, OR

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BA, Religious Studies, Willamette University, OR

Smith-Abbott, Mary A.
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AB, English, Anna Maria C Women, MA
MPA, Public Admin, Suffolk U, MA

Snook, Geoff O.
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AS, Auto Collision Repair Techno, Portland CC, OR

Snyder, Tatiana
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MS, Psychology, Portland State University, OR
PHD, Psychology, Portland State University, OR

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AM, Foreign Language, Kuban State University Russia
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Somes, Virginia A.
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BA, Mathematics, Mills College, CA
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Sorensen, Karen M.
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BS, Exercise and Sport Science, Oregon State University, OR
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BS, Elementary Education, Western Oregon University, OR
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BS, Physics, Technical Univ of Berlin, GER
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Standley, Wally
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BS, Psychology, Eastern Oregon University, OR

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BA, Biology, Yale U, CT
MA, Individualized Program, University of Oregon, OR
MD, Medicine, Oregon Health Science U, OR

Stephanson, Sue M.
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AS, Transfer Program, Portland CC, OR
BS, Social Science, Portland State University, OR

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Instr/Mach Tech
AAS, Machine Manufacturing Techno, Portland CC, OR

Stockton, Matt S.
Instr/Philosophy
BS, Anthropology, University of Oregon, OR
MA, Philosophy, University of Montana, MT
MA, Counseling Psychology Marr/Fam, Lewis & Clark College, OR

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BA, English, Reed College, OR
MA, Counseling Psychology, Pacifica Graduate Inst, CA

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

Stromholt, Kitty M.
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AA, General Studies, Portland CC, OR
BS, Psychology, Portland State University, OR
MS, Psychology, Portland State University, OR

Suarez, Roberto B.
Coord/Stdt Outreach Or
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/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

Tang, Cara L.
Instr/Comp Info Sys
BS, Computer Science, Virginia Poly Inst & St U U, V
MS, Computer Science & Application, Virginia Poly Inst & St U U, V

Tangredi, Patrick J.
Instr/Theater Arts
BA, English, Massachusetts College, MA
MFA, Theatre Arts, Tulane University, LA

Taylor, Steven B.
Instr/Paralegal
BA, English, University of Portland, OR
JD, Law, Lewis & Clark College, OR

Terefe, Mulu A.
Spec/Employment/5% Bil

Thomas, Marilyn
Instr/Biology
BS, Natural Resources Management, CA Polytechnic-San Luis Ob, CA
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Education</th>
</tr>
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<tbody>
<tr>
<td>Thompson, Penny S.</td>
<td>Coord/Resource Ctr</td>
<td>MST, Biology, Portland State University, OR</td>
</tr>
<tr>
<td>Thornburg, Burke L.</td>
<td>Mgr/Assoc Facilities Maint</td>
<td>CA, English, U of California/Irvine, CA</td>
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<td>Thornburgh, Cynthia C.</td>
<td>Instr/ESOL</td>
<td>BA, Humanities, U of California/Irvine, CA</td>
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<tr>
<td>Tillery, Sarah</td>
<td>Div Dean</td>
<td>BA, Women's Studies, U of California/Irvine, CA</td>
</tr>
<tr>
<td>Tompkins, Kristi J.</td>
<td>Instr/World Lang/German</td>
<td>BA, English, Portland State University, OR</td>
</tr>
<tr>
<td>Torgeson, Sander</td>
<td>Instr/CAT Dealer Svc Tech Trg</td>
<td>AA, Heavy Equip, Truck &amp; Diesel, SUNY A&amp; T C Alfred, NY</td>
</tr>
<tr>
<td>Totten, Delaye E.</td>
<td>Instr/Bus Admin</td>
<td>BA, Business Economics, U of California-Santa Barb, CA</td>
</tr>
<tr>
<td>Tran, Van T.</td>
<td>Spec/Employment/5% Bil</td>
<td></td>
</tr>
<tr>
<td>Truman, Glen F.</td>
<td>Instr/Ind Draft/ILLUS</td>
<td>BS, Industrial Arts Education, Oregon State University, OR</td>
</tr>
<tr>
<td>Tubbin, Steve A.</td>
<td>Mgr/Assoc Bond Project</td>
<td></td>
</tr>
<tr>
<td>Underwood, Jan M.</td>
<td>Instr/World Lang/Spanish</td>
<td>MA, Foreign Lit &amp; Language, Portland State University, OR</td>
</tr>
<tr>
<td>Urbina, Joe M.</td>
<td>Instr/ABE/GED</td>
<td>BA, Liberal Studies, California St U- L.A., CA</td>
</tr>
<tr>
<td>Urbina, Marlo M.</td>
<td>Spec/Student Res</td>
<td>BS, Sociology, Oregon State University, OR</td>
</tr>
<tr>
<td>VanBrocklin, Heidi N.</td>
<td>Supv/PE Facil/Sports Athletics</td>
<td></td>
</tr>
</tbody>
</table>
Information Science, University of Washington, WA

Wagner, Robert A.
Assoc VP/College Advancement
BA, Political Science, Portland State University, OR
MA, Public Policy: Philo & Social, George Washington U, DC

Wainright, Nicole C.
Advisor/Fin Aid
AGEN, General Studies, Portland CC, OR

Walters, Patrick
Instr/Comp & Lit
BA, English, SUNY Buffalo Main Camp, NY
MA, English, SUNY Buffalo Main Camp, NY

Ward, Laura J.
Mgr/Energy Resource

Warneke, George J.
Instr/Auto Body Rep

Washburn, Charles J.
Instr/Vis Arts
BA, Art, Lewis & Clark College, OR
MFA, Ceramics, Rochester Inst Tech, NY

Washington, Becky L.
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BS, Psychology, Portland State University, OR
MPA, Public Administration, Portland State University, OR

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Instr/Comp Appl/Office Syst
BA, International Affairs, Lewis & Clark College, OR
MIM, International Management, Portland State University, OR

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BA, Interdisciplinary Studies, Western Oregon University, OR
MA, Art History, University of Washington, WA

Weikel-Delaplane, Carrie
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BA, Geography, U N Carolina - Wilmington, NC
MS, S Dakota St U, SD

Weimer-Dale, Pamela S.
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BS, Business Education, Oregon State University, OR

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BM, Music, Kentucky St U, KY

Wenger, Dan O.
Div Dean

Wessel, Nancy
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BA, Sociology, S Illinois U Carbondale, IL
MA, Sociology, S Illinois U Carbondale, IL
MA, Tesl, S Illinois U Carbondale, IL

PHD, Sociology, S Illinois U Carbondale, IL

Wheeler, Van V.
Instr/Comp & Lit
MFA, Literature, Warren Wilson C, NC

Wherry, Jonathan D.
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MS, Mathematics, University of Oregon, OR

White, Rita
Spec/Employment

Whitford, John P.
Spec/Acad Advising
BS, Information Systems, George Fox University, OR
BS, Management, 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

Wihr, 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

Wilde, Sarona-Lee
Mgr/Payroll

Wilder, Lorene V.
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Willebrand, Richard G.
Instr/Trades and Industry
BFA, Drama, Fort Wright College

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Instr/EMT
AS, Nursing, RN, Imperial Valley College, CA
BS, Nursing, National University, CA
MN, Nursing, Univ of Phoenix - Main, AZ

Williams, Jonathan L.
Instr/Diesel Serv Mech

Williams, Lynda A.
Spec/Acad Advising
BA, English Literature, California St U- Dmngz Hlls, CA
MS, Counseling and Edu. Leadership, California St U- L.A., CA

Williams, Sandra N.
Instr/Elec Eng
BS, Electrical and Electronics Eng, University of Craiova, ROM
MS, Electrical and Electronics Eng, University of Craiova, ROM
MBA, Business Administration, Marylhurst University, OR

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BA, Communication Studies, Portland State University, OR
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Instr/Comp & Lit
BA, English Literature, Portland State University, OR
MA, English Literature, Portland State University, OR

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Instr/Sociol
BS, Elementary Education, Utah State University, UT
MA, English, Utah State University, UT
PHD, Sociology, Utah State University, UT

Wood, Ray P.
Spec/Employment
MA, German, U N Carolina - Chapel Hill, NC
DNP, Naturopathic Medicine, N.D., Nat Coll Naturopathic Med, OR

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Dir/Grant Development
BA, Communication Studies, Pacific Lutheran U, WA

Wright, Gayle K.
Instr/Radiography
AAS, Radiologic Technology, Portland CC, OR
BS, Health Care Administration, Concordia University, OR

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BA, English, U Kentucky Main Camp, KY
MFA, Writing, Sch Art Inst Chicago, IL

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BA, Political Science, Reed College, OR
MPA, Public Admin, Harvard U, MA

Yamaguchi, Takako
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BS, Elementary Education, Oregon College of Education OR
MS, Education, Oregon College of Education OR

Yao, Carl
Instr/Math
MS, Computer Science, Portland State University, OR

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AB, Spanish, Ripon C, WI
MA, Spanish, Portland State University, OR

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MA, Mathematics, San Francisco State U, CA

Yurasits, Stephanie
Instr/Math
PHD, Environ Sci & Res - Physics, Portland State University, OR
MS, Physics, Portland State University, OR

Zable, Tony C.
Instr/Physics
BA, English, Bowling Green St U Main, OH
MA, English, Western Washington Univ, WA

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Instr/Psych
BA, Psychology, California St U-Fullerton, CA
MA, Psychology, U of California/Riverside, CA

Zunkel, Jane R.
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BA, English, U of California/Riverside, CA

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MPA, Public Admin, Harvard U, MA

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BS, Elementary Education, Oregon College of Education OR
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MS, Computer Science, Portland State University, OR

Yorba, Stephanie R.
Instr/World Lang/Spanish
AB, Spanish, Ripon C, WI
MA, Spanish, Portland State University, OR

Youtz, Ralf M.
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MA, Mathematics, San Francisco State U, CA

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MS, Physics, Portland State University, OR

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MA, English, Western Washington Univ, WA

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MA, Psychology, U of California/Riverside, CA

Zunkel, Jane R.
Instr/Comp & Lit
BA, English, U of California/Riverside, CA

Zweben, Harry T.
Counselor/Rehab Guid
COURSE DESCRIPTIONS

Alcohol and Drug Counselor

AD 101. Alcohol Use and Addiction. 3 Credits.
Provides a 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.
Facilitates the acquisition of motivational interviewing counseling skills as applied to the arena of addiction counseling. Prerequisite: AD 150, AD 151. Prerequisite/concurrent: WR 122. Corequisite: AD 157. 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. 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. Co-requisite: 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 contacts 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 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 122. Co-requisite: AD 251. Audit available. Audit available.

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. Corequisite: AD 250.

AD 255. Multiple Diagnoses. 3 Credits.
Examines and considers the treatment of co-existing psychiatric, substance use, and co-existing mental disorders, effective intervention, and referral of clients to optimum resources for resolving coexisting diagnoses. Develops clear ethical guidelines for alcohol and drug counselors practicing within an area of competence. Prerequisites: AD 101, AD 102, AD 151, WR 121. Prerequisite or concurrent: WR 122, PSY 239. Audit available.

AD 270A. Practicum: Addiction. 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 the opportunity to demonstrate facility with the documentation required for the A/D practicum course, and develop an individualized plan for success in practicum. Prerequisite/Concurrent: AD 102, AD 150, AD 151.

Alternative Learning Courses

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. Audit available.

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. Audit available.

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. Audit available.

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. Prerequisite: Placement into WR 80, RD 80, ESOL 250 or ESOL 252.

ALC 51A. Basic English Skills Workshops and Lab. 1 Credit.
Provides an individualized plan of study with the English Coordinator to identify workshops and resources to improve English grammar, punctuation, writing, reading, and/or communication skills. Content varies depending upon interest and diagnosed needs.

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. 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. 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 FCC resources.

ALC 60A. 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 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. Audit available.

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. Audit available.

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. Audit available.

ALC 95C. Math 95 Lab - 2.00 credits. 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 of ASL 101, further developing all skills. Primary emphasis on the student’s active communication in ASL. Includes grammar and culture information. Proficiency target level: Intermediate low. Prerequisite: ASL 101 or ASL 150 or Sign Language Proficiency Interview through Sign Language Interpretation Program (call SLIP office for an appointment). Prerequisite course must have been completed within one year of class enrollment; proficiency interview within one term. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, 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/AAS, 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/AAS, 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/AAS, 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. Reviewing, expanding, and perfecting expressive skill, structure, and vocabulary for the purpose of active communication. Proficiency target level: Intermediate High. Sign Language Proficiency Interview may be required. Prerequisite: ASL 103 or ASL 151. Prerequisite course must have been completed within one year of class enrollment; and Sign Language Proficiency Interview within one term.
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/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 104. Language and Culture. 4 Credits.
Introduces basic concepts, approaches, and perspectives of linguistic anthropology. Explores how language relates to the relationship of the individual to society and the role language plays in constituting power, hierarchy, ethnicity, gender, ideology, and other aspects of social identity. Explores how language can also affect the ways that speakers conceptualize actions and organize the world. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

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/AADT, Social Sciences/AS, Social Sciences/AAS, 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, social organization, and political structures. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

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 modern medicine and psychotherapy will be explored. Prerequisite: WR 121 and MTH 20 or equivalent placement test scores, and ATH 103 or instructor permission. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, 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/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 230. Native Americans of Oregon. 4 Credits.
Presents the history of anthropological research and the prehistoric, 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/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 231. 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/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

ATH 232. Native North Americans. 4 Credits.
Surveys anthropology and distribution of the native North American peoples. Presents history of anthropological research and the prehistoric, 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/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.
ATH 234. Death: Crosscultural Perspectives. 4 Credits.
An interdisciplinary study into cross-cultural variations regarding human responses
to death and the differing cosmological implications they suggest. Death, a
-cultural universal, is addressed in its diversity from both anthropological and
sociological perspectives. The subject of death as experienced by several major
regions and cultures of the world is explored, including Asia, India, Ball, Middle East,
Melanesia and Native American; historical trends in Western Europe and Americas
are assessed regarding the evolution of contemporary perspectives on mortality.
ATH 234 and SOC 234 cannot both be taken for credit. Recommended: A course in
Anthropology or Sociology is desirable.

ATH 235. Survey of Prehistoric Mexico and Central America. 4 Credits.
Study of the development, form and history of pre-Columbian Indian civilizations,
surveying the achievements of the Maya, the Aztec and their neighbors. Audit
available.

ATH 298. Independent Study: Anthropology. 3 Credits.
Individualized, advanced study in areas of anthropology not considered in other
courses, to meet special interests or program requirements. Complete a term
project and readings approved by the instructor. Recommended: prior study in
anthropology and instructor permission. Audit available.

Applied Music
MUP 100. Individual Lessons for Non-majors. 1 Credit.
Includes individual instruction in piano, organ, voice and instruments of the band
and orchestra. Can be taken for a maximum of six credits. Credit fee is paid to the
college. Lesson fees are variable and paid directly to instructor. Audit available.

MUP 171A. Applied Music/Piano. 1-2 Credit.
Provides individual private piano instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, applied keyboard
knowledge, sight-reading and other aspects of musicianship as applied to the piano.

MUP 171B. Applied Music/Piano. 1-2 Credit.
Provides individual private piano instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, applied keyboard
knowledge, sight-reading and other aspects of musicianship as applied to the piano.
Prerequisite: MUP 171A.

MUP 171C. Applied Music/Piano. 1-2 Credit.
Provides individual private piano instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, applied keyboard
knowledge, sight-reading and other aspects of musicianship as applied to the piano.
Prerequisites: MUP 171B.

MUP 174A. Applied Music/Voice. 1-2 Credit.
Provides individual private voice instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, diction, sight-
reading and other aspects of musicianship as applied to singing.

MUP 174B. Applied Music/Voice. 1-2 Credit.
Provides individual private voice instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, diction, sight-
reading and other aspects of musicianship as applied to singing. Prerequisite: MUP 174A.

MUP 174C. Applied Music/Voice. 1-2 Credit.
Provides individual private voice instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, diction, sight-
reading and other aspects of musicianship as applied to singing. Prerequisite: MUP 174B.

MUP 175A. Applied Music/Violin. 1-2 Credit.
Provides individual private violin instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from the classical
tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to violin performance.

MUP 175B. Applied Music/Violin. 1-2 Credit.
Provides individual private violin instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from the classical
tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to violin performance. Prerequisite: MUP 175A.

MUP 175C. Applied Music/Violin. 1-2 Credit.
Provides individual private violin instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from the classical
tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to violin performance. Prerequisite: MUP 175B.

MUP 177A. Applied Music/Violincello. 1-2 Credit.
Provides individual private cello instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from the classical
tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to cello performance.

MUP 177B. Applied Music/Violincello. 1-2 Credit.
Provides individual private cello instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from the classical
tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to cello performance. Prerequisite: MUP 177A.

MUP 177C. Applied Music/Violincello. 1-2 Credit.
Provides individual private cello instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from the classical
tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to cello performance. Prerequisite: MUP 177B.

MUP 178A. Applied Music/Bass. 1-2 Credit.
Provides individual private bass instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to bass performance.

MUP 178B. Applied Music/Bass. 1-2 Credit.
Provides individual private bass instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to bass performance. Prerequisite: MUP 178A.

MUP 178C. Applied Music/Bass. 1-2 Credit.
Provides individual private bass instruction. Develops applied performance skills at the
music major/minor level. Draws repertory and technique methods from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to bass performance. Prerequisite: MUP 178B.

MUP 180A. Applied Music/Guitar. 1-2 Credit.
Provides individual private guitar instruction. Develops performance skills at the
music major/minor level. Covers repertory and technique methods drawn from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, fretboard
knowledge, sight-reading and other aspects of musicianship as applied to the
guitar.

MUP 180B. Applied Music/Guitar. 1-2 Credit.
Provides individual private guitar instruction. Develops performance skills at the
music major/minor level. Covers repertory and technique methods drawn from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, fretboard
knowledge, sight-reading and other aspects of musicianship as applied to the
guitar. Prerequisite: MUP 180A.

MUP 180C. Applied Music/Guitar. 1-2 Credit.
Provides individual private guitar instruction. Develops performance skills at the
music major/minor level. Covers repertory and technique methods drawn from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, fretboard
knowledge, sight-reading and other aspects of musicianship as applied to the
guitar. Prerequisite: MUP 180B.

MUP 184A. Applied Music/Saxophone. 1-2 Credit.
Provides individual private saxophone instruction. Develops applied performance skills at the
music major/minor level. Covers repertory and technique methods drawn from classical
and/or jazz traditions. Includes training in performance practice and stylistic
interpretation through focus on tone production, technique, articulation, sight-
reading and other aspects of musicianship as applied to saxophone performance.
MUP 184B. Applied Music/Saxophone. 1-2 Credit.
Provides individual private saxophone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to saxophone performance. Prerequisite: MUP 184A.

MUP 184C. Applied Music/Saxophone. 1-2 Credit.
Provides individual private saxophone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to saxophone performance. Prerequisite: MUP 184B.

MUP 186A. Applied Music/Trumpet. 1-2 Credit.
Provides individual private trumpet instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trumpet performance. Prerequisite: MUP 186A.

MUP 186B. Applied Music/Trumpet. 1-2 Credit.
Provides individual private trumpet instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trumpet performance. Prerequisite: MUP 186A.

MUP 186C. Applied Music/Trumpet. 1-2 Credit.
Provides individual private trumpet instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trumpet performance. Prerequisite: MUP 186A.

MUP 188A. Applied Music/Trombone. 1-2 Credit.
Provides individual private trombone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trombone performance. Prerequisite: MUP 188A.

MUP 188B. Applied Music/Trombone. 1-2 Credit.
Provides individual private trombone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trombone performance. Prerequisite: MUP 188A.

MUP 191A. Applied Music/Percussion. 1-2 Credit.
Provides individual private percussion instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, knowledge of instruments, sight-reading and other aspects of musicianship as applied to percussion performance. Prerequisite: MUP 191A.

MUP 191B. Applied Music/Percussion. 1-2 Credit.
Provides individual private percussion instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, knowledge of instruments, sight-reading and other aspects of musicianship as applied to percussion performance. Prerequisite: MUP 191A.

MUP 191C. Applied Music/Percussion. 1-2 Credit.
Provides individual private percussion instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, knowledge of instruments, sight-reading and other aspects of musicianship as applied to percussion performance. Prerequisite: MUP 191B.

MUP 192A. Applied Music/Miscellaneous. 1-2 Credit.
Provides individual private instruction on miscellaneous instrument from the western and global traditions. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to the performance of miscellaneous instruments. Prerequisite: MUP 192A.

MUP 192B. Applied Music/Miscellaneous. 1-2 Credit.
Provides individual private instruction on miscellaneous instrument from the western and global traditions. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to the performance of miscellaneous instruments. Prerequisite: MUP 192B.

MUP 192C. Applied Music/Miscellaneous. 1-2 Credit.
Provides individual private instruction on miscellaneous instrument from the western and global traditions. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to the performance of miscellaneous instruments. Prerequisite: MUP 192C.

MUP 217A. Applied Music/Piano II. 1-2 Credit.
Provides individual private piano instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to the piano. Prerequisite: MUP 217A.

MUP 217B. Applied Music/Piano II. 1-2 Credit.
Provides individual private piano instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, applied keyboard knowledge, sight-reading and other aspects of musicianship as applied to the piano. Prerequisite: MUP 217A.

MUP 217C. Applied Music/Piano II. 1-2 Credit.
Provides individual private piano instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, applied keyboard knowledge, sight-reading and other aspects of musicianship as applied to the piano. Prerequisite: MUP 174C.

MUP 274A. Applied Music/Voice II. 1-2 Credit.
Provides individual private voice instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, diction, sight-reading and other aspects of musicianship as applied to singing. Prerequisite: MUP 274A.

MUP 274C. Applied Music/Voice II. 1-2 Credit.
Provides individual private voice instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, diction, sight-reading and other aspects of musicianship as applied to singing. Prerequisite: MUP 274A.

MUP 275A. Applied Music/Violin II. 1-2 Credit.
Provides individual private violin instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to violin performance. Prerequisite: MUP 175C.

MUP 275B. Applied Music/Violin II. 1-2 Credit.
Provides individual private violin instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to violin performance. Prerequisite: MUP 275A.
MUP 275C. Applied Music/Violin II. 1-2 Credit.
Provides individual private violin instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from the classical tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to violin performance. Prerequisite: MUP 275B.

MUP 277A. Applied Music/Violoncello II. 1-2 Credit.
Provides individual private cello instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from the classical tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to cello performance. Prerequisite: MUP 277A.

MUP 277C. Applied Music/Violoncello II. 1-2 Credit.
Provides individual private cello instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from the classical tradition. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to cello performance. Prerequisite: MUP 277C.

MUP 278A. Applied Music/Bass II. 1-2 Credit.
Provides individual private bass instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to bass performance. Prerequisite: MUP 178C.

MUP 278B. Applied Music/Bass II. 1-2 Credit.
Provides individual private bass instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to bass performance. Prerequisite: MUP 278B.

MUP 278C. Applied Music/Bass II. 1-2 Credit.
Provides individual private bass instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to bass performance. Prerequisite: MUP 278B.

MUP 284A. Applied Music/Saxophone II. 1-2 Credit.
Provides individual private saxophone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to saxophone performance. Prerequisite: MUP 284A.

MUP 284C. Applied Music/Saxophone II. 1-2 Credit.
Provides individual private saxophone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to saxophone performance. Prerequisite: MUP 284B.

MUP 286A. Applied Music/Trumpet II. 1-2 Credit.
Provides individual private trumpet instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trumpet performance. Prerequisite: MUP 186C.

MUP 286B. Applied Music/Trumpet II. 1-2 Credit.
Provides individual private trumpet instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trumpet performance. Prerequisite: MUP 286A.

MUP 288A. Applied Music/Trombone II. 1-2 Credit.
Provides individual private trombone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trombone performance. Prerequisite: MUP 286B.

MUP 288B. Applied Music/Trombone II. 1-2 Credit.
Provides individual private trombone instruction. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, articulation, sight-reading and other aspects of musicianship as applied to trombone performance. Prerequisite: MUP 286B.

MUP 291A. Applied Music/Percussion II. 1-2 Credit.
Provides individual private percussion instruction. Develops applied performance skills at the music major/minor level. Draws repertory and technique methods from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, knowledge of instruments, sight-reading and other aspects of musicianship as applied to percussion performance. Prerequisite: MUP 191C.

MUP 291B. Applied Music/Percussion II. 1-2 Credit.
Provides individual private percussion instruction. Develops applied performance skills at the music major/minor level. Draws repertory and technique methods from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, knowledge of instruments, sight-reading and other aspects of musicianship as applied to percussion performance. Prerequisite: MUP 291A.

MUP 292A. Applied Music/Miscellaneous II. 1-2 Credit.
Provides individual private instruction on miscellaneous instruments from western and global traditions. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, sight-reading and other aspects of musicianship as applied to the performance of miscellaneous instruments. Prerequisite: MUP 192C.

MUP 292B. Applied Music/Miscellaneous II. 1-2 Credit.
Provides individual private instruction on miscellaneous instruments from western and global traditions. Develops applied performance skills at the music major/minor level. Covers repertory and technique methods drawn from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, sight-reading and other aspects of musicianship as applied to the performance of miscellaneous instruments. Prerequisite: MUP 292A.
MUP 293A. Applied Music/Guitar II. 1-2 Credit.
Provides individual private guitar instruction. Develops applied performance skills at the music major/minor level. Draws repertory and technique methods from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, fretboard knowledge, sight-reading and other aspects of musicianship as applied to the guitar. Prerequisite: MUP 180C.

MUP 293B. Applied Music/Guitar II. 1-2 Credit.
Provides individual private guitar instruction. Develops applied performance skills at the music major/minor level. Draws repertory and technique methods from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, fretboard knowledge, sight-reading and other aspects of musicianship as applied to the guitar. Prerequisite: MUP 293A.

MUP 293C. Applied Music/Guitar II. 1-2 Credit.
Provides individual private guitar instruction. Develops applied performance skills at the music major/minor level. Draws repertory and technique methods from classical and/or jazz traditions. Includes training in performance practice and stylistic interpretation through focus on tone production, technique, fretboard knowledge, sight-reading and other aspects of musicianship as applied to the guitar. Prerequisite: MUP 293B.

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 helping 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 Ohms Law. Introduces electrical safety, conductors, wire sizes and their application as per the American Wire Gauge (AWG) Table. The principles of voltage drop, efficiency and cost of electrical energy will also be covered. Audit available.

APR 102. LME: DC Motors. 3 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/ wave-form. 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.
Focuses on alternating current power distribution, transformers, motors, storage cells, solenoids and 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 alternating current theory, lighting, grounding and bonding, controllers, 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, tagout, lockout and appliances. Covers series, branch, and parallel circuits in detail, and the basic use of a multimeter to check for current, voltage, and resistance. Prerequisites: APR 124 or TE 9613. Audit available.

APR 126. Electrical Systems Installation per NEC. 3 Credits.
Covers standoff 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 ESOL 262); (RD 90 or ESOL 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 AC 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 150. Introduction to Industrial Maintenance. 4 Credits.
Covers the operation of refrigeration AC 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 160. Calculations for the Trades. 4 Credits.
Covers measurements and calculations used in industrial and commercial facilities settings. Includes linear and volume measurement methods using analog and digital tools and instruments: ruler, caliper, micrometer, dial indicator etc. Focuses on the use of fractions, decimal conversion, roots, algebraic equations, geometry, and right angle trigonometry to perform calculations for equipment repair, maintenance, installation, and operation. Prerequisites: Either APR 160 or FMT 111 and placement into (MTH 20, WR 90, RD 90) or department permission. Audit available.

APR 164. Industrial Blueprints & Schematics For the Trades. 2 Credits.
Provides an overview of the responsibilities and expectations for the Millwright/Industrial Maintenance Technician at today’s Industrial Worksite. Centers on the electrical, mechanical, fabricating, welding, machining, hydraulic, pneumatic and troubleshooting skill-set required in the Industrial workplace. Emphasizes safe work practices. Prerequisites: Placement into MTH 60, RD 115, and WR 115 and department permission. Audit available.

APR 166. Industrial Rigging. 2 Credits.
Covers the use of fiber rope, chain, slings, strapping, wire rope, and scaffolding when moving, repairing, and maintaining heavy industrial equipment and industrial site utilities. Includes applications to overhead cranes, tower cranes, mobile cranes, boom cranes, hoists, and fork lifts. Emphasizes safe work practices when rigging. Prerequisite: APR 164 and placement into (MTH 60, RD 115, WR 115) or department permission. Audit available.

APR 168. Introduction to Bearings, Seals, and Lubrication. 3 Credits.
Introduces the array of blueprints and schematics found at an industrial worksite. Includes plumbing, process piping, structural, hydraulic, machining, sheet metal, welding, fabrication, electrical, and architectural prints, drawings, and schematics. Emphasizes interpretation of the specifications presented on prints, drawings, and schematics to specific types of industrial sites and equipment. Prerequisites: APR 162 and placement into (MTH 60, RD 115, WR 115) or department permission. Audit available.

APR 166. Industrial Rigging. 2 Credits.
Covers the use of fiber rope, chain, slings, strapping, wire rope, and scaffolding when moving, repairing, and maintaining heavy industrial equipment and industrial site utilities. Includes applications to overhead cranes, tower cranes, mobile cranes, boom cranes, hoists, and fork lifts. Emphasizes safe work practices when rigging. Prerequisite: APR 164 and placement into (MTH 60, RD 115, WR 115) or department permission. Audit available.

APR 168. Introduction to Bearings, Seals, and Lubrication. 3 Credits.
Introduces the array of blueprints and schematics found at an industrial worksite. Includes plumbing, process piping, structural, hydraulic, machining, sheet metal, welding, fabrication, electrical, and architectural prints, drawings, and schematics. Emphasizes interpretation of the specifications presented on prints, drawings, and schematics to specific types of industrial sites and equipment. Prerequisites: APR 162 and placement into (MTH 60, RD 115, WR 115) or department permission. Audit available.
APR 170. Power Transmission Systems. 3 Credits.
Introduces the array of power transmission methods utilized in an industrial environment especially in manufacturing. Includes gearing and gear boxes, belt drives, magnetic couplings, direct couplings, chain drives, conveyor belts, vibration analysis, lubrication systems, predictive maintenance, planned preventive maintenance, corrective maintenance and troubleshooting. Emphasizes safety when working on or near industrial power transmission systems. Prerequisite: APR 168 and placement into (MTH 60, RD 115, WR 115) or department permission. Audit available.

APR 172. Introduction to Hydraulics. 3 Credits.
Introduces the physical dynamics and properties of incompressible fluids and the practical application of fluid power principles involving pressure, flow and force to the hydraulic systems found at industrial worksites. Covers fundamental hydraulic schematics and circuits and the function of components including pumps, valves, cylinders, motors, reservoirs, actuators, fluid conductors, and valves. Introduces hydraulic instrumentation, specialized tools, troubleshooting, and maintenance. Emphasizes safety procedures and practices around high pressure hydraulic equipment. Prerequisite: APR 170 and placement into (MTH 60, RD 115, and WR 115) or Department 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 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. Includes control systems, specifically motor starters and controllers. Electromagnetic controls, motors and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. APR 201 and ELT 201 cannot both be taken for credit. Prerequisites: APR 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, luminaires, air conditioning systems, switches, controllers, switches, controllers, electromagnetic controls, and transformers will also be covered. Lab activities will utilize electrical test equipment to analyze electric motor control malfunctions. 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, manufacturing buildings, homes, power plants, and panel boards. Also covers component and tubing sizing. Emphasizes component and tubing sizing. Emphasizes standards set by the Federal Occupational and Administrative Rules. Includes electrical calculations applicable to an examination and to the workplace. Recommended. WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

APR 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. APR 230 and ELT 230 cannot both be taken for credit. Audit available.

APR 231. National Electrical Code II. 3 Credits.
Prepares electricians for state examination as prescribed by Oregon State Building Codes Division. Includes code explanations and applications. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. APR 231 and ELT 231 cannot both be taken for credit. Audit available.

APR 250B. Equity in the Trades. 4 Credits.
Introduces histories of inequity in the trades and strategies for positive change, with emphasis on the United States and Oregon. Prepares individuals for effective and inclusive leadership within the trades as advocates, allies, project managers, general contractors, or superintendents.

APR 250C. Basic Hands on Training for the Trades. 3 Credits.
Covers the use of the most common hand and power tools found in the construction industry. Introduces the basic, accepted construction practices applied by a variety of trades. Emphasizes standards set by the Federal Occupational Safety and Health Administration (OSHA). Prerequisites: Department permission.

APR 260. Pneumatic System Operations. 4 Credits.
Covers the pneumatic systems used at today’s industrial worksites for both control and process applications including system components. Covers the distribution of compressed air from different types of industrial air compressors including system components. Covers component and tubing sizing. Emphasizes component troubleshooting and repair, as well as working safely in proximity to a compressed air system. Prerequisite: APR 172 and placement into (MTH 60, RD 115, WR 118) or department permission. Audit available.

APR 264. Mechanical Drive Alignment. 3 Credits.
Reviews fundamentals of bearings, shafts, belt drives, chain drives, sheaves, couplings and lubrication used for precise operation of heavy industrial equipment. Includes industrial torqueing, tensioning, and machine condition monitoring techniques. Covers precision alignment using analog instruments such as a straight edge and dial indicator. Covers precision alignment using digital instruments such as lasers. Includes vibration analysis. Emphasizes safety procedures while working near machinery, especially machinery with high speed rotating parts. Prerequisite: APR 260 and placement into (MTH 60, RD 115 and WR 115) or department permission. Audit available.
ARCH 112. 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. Recommend: ARCH 121 and ARCH 124. Prerequisite: ARCH 110 and ARCH 136. Audit available.

ARCH 121. Structural Systems 1. 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 2. 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 3. 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 126. 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 127. 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 building plans. 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 161. Residential Print Reading. 2 Credits.
Introduces methods to identify, communicate and apply information found on typical residential construction drawings. Audit available.

ARCH 162. Commercial Print Reading. 2 Credits.
Introduces methods to identify, communicate and apply information found on typical commercial construction drawings. Recommended: ARCH 161. Audit available.

ARCH 200. Principles of Architectural Design. 4 Credits.
Introduces concepts, theories, and practices of the discipline of architecture. Includes study of perceptual, environmental, technical and organizational concepts through lectures and individual projects in observing architectural spaces and forms. Audit available.

ARCH 201. Residential Studio. 6 Credits.

ARCH 266. Predictive Maintenance Technologies. 4 Credits.
Covers the theory and application of Predictive Maintenance (PdM) for heavy industrial equipment and machinery. Covers maintenance procedures that are based on regular monitoring of equipment and machinery condition rather than on regular, planned, time-interval maintenance procedures (PM). Includes the use of up-to-date monitoring technologies especially infrared thermometers, infrared thermal imaging, ultrasonic detection, high speed vibration analysis, and machine oil analysis. Includes data application to the creation of PdM Plans. Emphasizes OSHA safety procedures while collecting data or maintaining industrial equipment and machinery. Prerequisites: APR 264 and placement into (MTH 60, RD 115, WR 115) or Department Permission.

ARCH 268. Industrial Equipment Controls. 3 Credits.
Explores the array of manual, mechanical, electrical, electronic, electromechanical, and magnetic controls, switches, and feedback devices found at today’s industrial worksites, manufacturing plants, and processing facilities. Includes both digital and analog controls, switches, and feedback devices. Covers troubleshooting, maintenance, repair, adjustment, replacement, and selection/installation. Introduces programmable logical control (PLC) strategies and programmable/integral/derivative (PID) control strategies. Covers control component function in a control system. Emphasizes safety when working on any industrial equipment control system. Prerequisites: APR 266 and placement into (MTH 60, RD 115, WR 115) or Department Permission. Audit available.

ARCH 272. HVAC, Steam & Hot Water Systems. 4 Credits.
Covers the practical application of the laws of thermodynamics and heat transfer to operating, maintaining, and repairing hot water, steam, chilled water, refrigeration, heating, ventilating, and air conditioning systems found in today’s industrial facilities, manufacturing plants, and processing plants. Includes the physical properties of water and refrigerants. Includes operation and servicing of controls and components of these systems. Includes chemical water treatment for boilers, chillers and cooling towers. Emphasizes achieving optimal energy use for thermal systems operation. Emphasizes safe work practices around thermal systems. Prerequisites: APR 268 and placement into (MTH 60, RD 115, and WR 115) or Department permission. Audit available.

ARCH 274. Architectural Design Draft

ARCH 100. Graphic Communication for Designers. 3 Credits.
Addresses the fundamentals of perspective drawings as a communicative device. Develops perspective, freehand sketching and diagramming skills, by building a graphic vocabulary and establishing a language of architectural communication. Audit available.

ARCH 101. Introduction to Residential Design. 3 Credits.
Introduces design process and drawing for residential design focusing on design of a new single family residence. Prerequisite: ARCH 110 and ARCH 126. Audit available.

ARCH 102. Architectural Graphics 2. 3 Credits.
Introduction to the design process and drawing for commercial design focusing on design of new light frame commercial building. Prerequisite: ARCH 110. Audit available.

ARCH 110. Introduction to ArchiCAD 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 202. Commercial Studio. 4 Credits.
Covers the design process and schematic/presentation drawings for a light frame commercial building. Prerequisites: ARCH 101, ARCH 133, and ARCH 127 or ARCH 237. Prerequisite/concurrent: ARCH 112. Audit available.

ARCH 203. Residential Renovation Studio. 6 Credits.

ARCH 204. Green Residential Studio. 4 Credits.
Covers advanced study of sustainable building design and systems, applied to residential buildings. Includes site analysis passive technologies, and use of sustainable building materials. Involves application of concepts applied to an actual house design in a studio format. Prerequisite: ARCH 101 or department approval for similar experience. Prerequisite/concurrent: ARCH 131 and ARCH 224, and RD 121; or instructor permission. Audit available.

ARCH 224. Active and Passive Building Systems. 4 Credits.
Covers environmental building systems for residential applications and evaluation of building performance. Prerequisite: ARCH 124. Audit available.

ARCH 237. Introduction to Revit Architecture. 3 Credits.
Introduces Revit Architecture and its applications to architectural design and drafting. Audit available.

ARCH 247. Intermediate Revit Architecture. 3 Credits.
Explores Revit Architectures intermediate commands and features and its application to architectural design. Prerequisite: ARCH 237 Audit available.

ARCH 256. Detail Drawing with AutoCAD. 3 Credits.
Develops skills in creating construction detail and section drawings using appropriate scale, line weights, symbols and annotations. Prerequisite: ARCH 136. Audit available.

ARCH 280. Cooperative Education:Architectural Design and Drafting. 1-4 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 student spends on job site. Must be coordinated with the supervisor, instructor, and cooperative education specialist. Department permission required.

Art

ART 101. Understanding Architecture. 4 Credits.
Introduces aesthetic, historical, and critical issues of architecture. Presents buildings, gardens, fountains, malls and public spaces in terms of experiencing, appreciating and understanding roles of architecture in the urban world and as reflections of human interaction with the socio-political and physical environment. 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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 102. Understanding the Visual Arts. 4 Credits.
Introduces aesthetic, historical, and critical issues of the visual arts. Presents aspects of drawing, painting, sculpture and craft in terms of experiencing, appreciating and understanding their roles in our lives. The series ART 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. 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 103. Understanding New Media Arts. 4 Credits.
Introduces aesthetic, historical, and critical issues of new media arts and design. Presents aspects of printmaking, photography, graphic design, video, film, performance, installation, and other forms of time-based art in terms of experiencing, appreciating and understanding their roles in our lives. The series ART 101, 102, 103 may be taken in any order. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. 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 115. Basic Design - 2D Foundations. 3 Credits.
Introduces two dimensional black and white foundations studio experience centered on creative problem solving. Develops perceptual awareness and understanding. Establishes critical skills and personal artistic vision. Investigates a broad range of materials, techniques and projects to explore black and white design concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available. 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 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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 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 cultural context in both a historical and contemporary context. 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 119. Basic Design-4D Foundations. 3 Credits.
Introduces the basic principles of time, as it relates to the creative arts, which include the notion of occurrence and the episodic, duration, tempo, intensity, scope and context. Introduces concepts, processes and basic use of related tools and technology in preparation for continuing fine and design art work at the 200 level. Utilizes a range of materials, techniques and projects to engage concepts with reference to historical and contemporary perspectives. Basic Design series 115, 116, 117 and 119 may be taken in any sequence. Audit available. 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 131A. Drawing I. 3 Credits.
Explores basic perceptual drawing techniques and tools as well as the development of the language of drawing in historical and contemporary contexts. Introduces critical skills for sighting, measuring, designing and constructing in drawing. This is the first course in 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 131B. Drawing I. 3 Credits.
Introduces intermediate drawing techniques and tools as well as the development of the language of drawing in historical and contemporary contexts. Introduces critical skills for sighting, measuring, designing and constructing in drawing. This is the second course in a three-course sequence. Prerequisites: ART 131 or ART 131A 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 131C. Drawing I. 3 Credits.
Builds upon intermediate drawing techniques and tools as well as the development of the language of drawing in historical and contemporary contexts. Applies critical skills for sighting, measuring, designing and constructing in drawing. This is the third course in 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 140A. Digital Photography I. 3 Credits.
Introduces basic digital photography 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. Recommended: Basic computer skills & ART 141 or ART 142A. 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 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, explore artistic intent, examine aesthetic and structural solutions and expand personal expression. 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 141. Introduction to Photography. 3 Credits.
Explores photography from film to digital as it relates to creative arts, history, media and culture in both a historical and contemporary context. Introduces following photographic processes, principles and technology in preparation for continuing fine art and media based work. Develops the use of self-reflection and peer critique in photographic practice. Requires access to a camera; film-based SLR (single-lens-reflex) or DSLR (digital single-lens-reflex) cameras are preferred but not required. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, 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 peer critique and self-reflection. Requires access to a manual, SLR (single-lens reflex) film camera. This is the third course in a three-course sequence for first year black and white darkroom photography. 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 peer critique and self-reflection. Requires access to a manual, SLR (single-lens reflex) film camera. This is the second course of a three-course sequence for first year black and white darkroom photography. ART 142 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 basic intermediate 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 film, 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 142 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 143B. B&W Photography II (Darkroom). 3 Credits.
Introduces beginning 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 film, SLR (single-lens-reflex) camera with manual exposure controls. This is the second course of a three-course sequence for second year darkroom photography. Prerequisite: One term of ART 143 or ART 143A 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.
Introduces 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 film, 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/AOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/ASOT-B.

ART 181B. Painting II. 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 181A or equivalent permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/ASOT-B.

ART 181C. Painting III. 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 181A or ART 181B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOT, Arts and Letters/AS, Arts and Letters/AAS, 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, building business concerns, art market dynamics, internships, and/or through Service Learning Projects. 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 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 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/AS, Arts and Letters/AAS, Arts and Letters/AGS, 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 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 205H. 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 Late Antiquity, Early Christian and Medieval periods, beginning about 500 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/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 1300 CE. Prerequisites: ART 205 or ART 205A or equivalent 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 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 1300 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 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 impact of modernism on modern world art 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 the social and political milieu. 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 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.
Examines 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 historical 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 art as a medium of narrative. Analyzes aesthetic qualities unique to the comic book and graphic novel. Focuses on the history 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 Capitals and Humanist Bookhand. 3 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. 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 218B. Calligraphy I - Italic. 3 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 script. 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 219A. The Art of Hand Lettering: Monoline Techniques. 3 Credits.
Investigates tools and techniques to explore several styles of hand lettering as a vehicle for artistic expression through the use of hand written text. Develops a familiarity with creating and using a variety of scripts. Establishes a facility and understanding of the components of hand written scripts with a focus on monoline techniques. Audit available.

ART 219B. The Art of Hand Lettering: Special Tools. 3 Credits.
Explores the use of unusual tools as the basis for creating letters. 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 220A. Calligraphy II - Roman Capitals and Humanist Bookhand. 3 Credits.
Reviews the calligraphic scripts studied in the ART 218 sequence and refines the forms. Covers complex layout and design issues. Develops intermediate to 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. 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 220B. Calligraphy II - Italic. 3 Credits.
Reviews the calligraphic scripts studied in the ART 218 sequence and refines the forms. Covers complex layout and design issues. Develops intermediate to 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. 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 220C. Calligraphy II - Carolingian and Uncial. 3 Credits.
Reviews the calligraphic scripts studied in the ART 218 sequence and refines the forms. Covers complex layout and design issues. Develops intermediate to 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. 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 231A. Drawing II. 3 Credits.
Develops basic perceptual drawing techniques and tools as well as the understanding of the language of drawing in historical and contemporary contexts. Further develops critical skills for seeing, measuring, designing and constructing in drawing. This is the first course in a three-course sequence. Prerequisites: Three terms of ART 131 or ART 131C 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 231B. Drawing II. 3 Credits.
Further deepens basic perceptual drawing techniques and tools as well as the understanding of the language of drawing in historical and contemporary contexts. Further develops critical skills for seeing, measuring, designing and constructing in drawing. This is the second course in a three-course sequence. Prerequisites: ART 231 or ART 231A 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 231C. Drawing II. 3 Credits.
Further develops intermediate perceptual drawing techniques and tools as well as the understanding of the language of drawing in historical and contemporary contexts. Further develops critical skills for seeing, measuring, designing and constructing in drawing. 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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
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. Audit available. This course fulfills the following GE requirements: Arts and Letters/AADT, Arts and Letters/AS, 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 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: One term of ART 237 or ART 237A 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 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/AAOT, Arts and Letters/AS, 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 begin 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 intermediate 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 first 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 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. 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 II. 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 ART 240 or ART 240B or instructor permission. Audit available.

ART 243. The Photographic Portfolio. 3 Credits.
Develops a strong artistic vision through creating a professional portfolio. Develops critical skills necessary to expand perceptual and visual cultural awareness through critiques, discussions, reading, research and presentations of personal work. Emphasizes collaboration, professional standards, creative problem solving and service learning. Requires access to a camera. Recommended: ART 143 or ART 140 or ART 240 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 248A. Glass Casting. 3 Credits.
Provides an introductory studio experience involving the mechanics and design concerns necessary to make molds for glass casting and then casting in glass. Included is an overview of related processes and techniques and concepts that address historical and contemporary issues. Students will use a variety of techniques to develop and implement creative problem solving. Prerequisites: ART 248 or ART 248B 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 248B. Glass Casting. 3 Credits.
Provides an intermediate level studio experience involving the mechanics and design concerns necessary to make molds for glass casting and then casting in glass. Included is an overview of related processes and techniques and concepts that address historical and contemporary issues. Students will use a variety of techniques to develop and implement creative problem solving. Prerequisites: ART 248 or ART 248B 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 248C. Glass Casting. 3 Credits.
Provides an advanced level studio experience involving the mechanics and design concerns necessary to make molds for glass casting and then casting in glass. Included is an in-depth overview of related processes and techniques and concepts that address historical and contemporary issues. Students will use a variety of advanced techniques to develop and implement creative problem solving. Prerequisites: ART 248 or ART 248B 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 253A. Ceramics I. 3 Credits.
Introduces beginning ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develops a beginning intermediate level of critical problem solving and aesthetic and structural solutions, and expand perceptual awareness. This is the first course of a three-course sequence for first year ceramics. Prerequisites: One term 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 253B. Ceramics I. 3 Credits.
Introduces beginning intermediate level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develops a beginning intermediate level of creative problem solving and aesthetic and structural solutions, and expand perceptual awareness. This is the second course of a three-course sequence for first year ceramics. Prerequisites: 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 253C. Ceramics I. 3 Credits.
Introduces intermediate level ceramic processes, techniques, and concepts while addressing historical and contemporary issues. Develops an intermediate level of creative problem solving and aesthetic and structural solutions, and expand perceptual awareness. Includes demonstrations, lectures, slides and audiovisual materials. This is the third course of a three-course sequence for first year ceramics. Prerequisites: 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 ceramics processes, techniques, and concepts while addressing historical and contemporary issues. Develops a lower-advanced level of creative problem solving and aesthetic and structural solutions, including hand building, wheel throwing, use of plaster molds, and surface treatments. Includes critiques, discussions, and presentations to establish critical skills necessary to make molds for glass casting and then casting in glass. Includes demonstrations, lectures, slides and audiovisual materials. This is the first course of a three-course sequence. Prerequisite: 3 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 256B. Ceramics II. 3 Credits.
Introduces middle-advanced level ceramics processes, techniques, and concepts while addressing historical and contemporary issues. Develops 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 ceramics 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 creative problem solving and terminology of monoprints, relief and basic intaglio processes. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the first course of a three-course sequence. Prerequisite: ART 115 or ART 116 or ART 131A. 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 I. 3 Credits.
Introduces intermediate beginning printmaking processes, techniques, and concepts while addressing historical and contemporary issues. Develops an introductory level of creative problem solving and terminology of monoprints, relief and basic intaglio processes. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. This is the 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. 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 I. 3 Credits.
Explores intermediate printmaking processes, techniques, and concepts while addressing historical and contemporary issues. Includes terminology of monoprints, relief and intermediate intaglio processes. Includes critiques, discussions, and presentations to establish critical skills necessary to evaluate prints, explore artistic intent, examine aesthetic and structural solutions, and expand perceptual awareness. Explores 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. 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 II. 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. This is the first course of a three-course sequence. Prerequisites: 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. Prerequisites: ART 271 or ART 271A or instructor permission. Recommended: ART 115, 116 and 131A. Audit available.

ART 271C. Printmaking II. 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. This is the second course of a three-course sequence. Prerequisite: ART 270 or ART 276A 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 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 they relate to the human figure. Emphasizes personal artistic development with attention to compositional organization. Prerequisites: Two terms of ART 277 or ART 277A or instructor permission. 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 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 and conceptual framework. 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. 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. 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. 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. 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 281C. Painting II. 3 Credits.  
Expands 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/AOT, 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 advanced studio watercolor painting techniques, materials, and concepts while addressing historical and contemporary issues to increase visual literacy. Presents a conceptual framework for critical analysis along with basic art theory. Recommended: ART 280 or ART 280B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOT, 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 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 280 or ART 284C or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOT, 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 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/AOT, 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 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: Two terms of ART 287 or ART 287B or instructor permission. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOT, 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 in sculpture. Develops an introductory level of creative problem solving through a variety of techniques associated with the reductive process of carving to make sculpture. Establishes critical skills necessary to evaluate sculpture through critiques, discussions, and 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/AOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ART 290B. Sculpture: Plaster/Clay. 3 Credits.  
Introduces intermediate 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 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/AOT, 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. Examines aesthetic and structural solutions, and expanding perceptual awareness of sculpture. This is the second of a three-course sequence. Prerequisites: Two terms of ART 292 or ART 292B or instructor permission. Recommended: ART 117. Audit available.

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. Prerequisites: Recommended: ART 117. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAOT, Arts and Letters/AS, 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 structure, 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. Prerequisites: 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/AAOT, Arts and Letters/AS, 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. Employs 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/AAOT, Arts and Letters/AS, 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 in sculpture. 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/AGS, 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 relating to sculpture. Develops intermediate level 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/AGS, 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). Introduces theoretical 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/AGS, 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 and waterborne paint 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. Observes the shop and performs 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 280A.

Automotive Service Technology

AM 100. Intro to Automotive Systems. 4 Credits.
Introduces automotive tools, fasteners, precision measurement, service information systems manuals and shop procedures. Includes basic automotive service inspection, and measuring procedures and 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. Automatic Transmission/Transaxle. 4 Credits.
Introduces automatic transmissions/transaxles, the study of power flow and diagnosis of automatic transmission mechanical and hydraulic systems. Includes proper rebuild procedures, computerized identification and dynamometer testing of a student built automatic transmission. Prerequisite: CG 209. Audit available.
AM 131. Manual Drive Train and Axles. 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. Advanced Automatic and Manual Drive Train. 4 Credits.
Introduces work on approved customer vehicles, including 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. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 121 and AM 131. Prerequisite: CG 209. Audit available.

AM 141. Suspension and Steering. 4 Credits.
Introduces basic principles of suspension, steering and wheel alignment for passenger cars and light duty trucks including tire construction, types and sizing. Includes disassembly and reassembling suspension and steering system components. Introduces computerized 4-wheel-alignment, tire balancing and tire changing equipment. Prerequisite: CG 209. Audit available.

AM 142. Advanced Suspension, Steering and Brakes. 4 Credits.
Covers diagnosis and repair of suspension, steering and brake systems in a laboratory/shop setting. Includes how to perform complete suspension, steering and brake system inspection 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. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 151 and AM 141. Prerequisite: CG 209. Audit available.

AM 151. Brakes. 4 Credits.
Introduces principles of automotive braking systems. Includes disassembling and reassembling brake system components using school owned equipment. Includes 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. Covers proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.

AM 162. Electrical Systems II. 4 Credits.
Covers reading schematics, starting and charging system theory, operation, diagnosis and repair. Includes proper repair procedures, component identification and service procedures performed on school owned vehicles and components. Audit available.

AM 163. Advanced Electrical/Electronic Systems. 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. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 161 and AM 162. 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. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 163. 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 testing of emission and performance 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.
Emphasizes advanced engine performance theory and practice. Includes automotive service work in a live shop setting. This is a capstone course and the first course in a three-course sequence. Prerequisite: CG 209. Audit available.

AM 202. Auto Shop Lab II. 4 Credits.
Emphasizes advanced engine performance theory and practice. Includes automotive service work in a live shop setting. This is a capstone course and the second course in a three-course sequence. Prerequisite: CG 209. Audit available.

AM 203. Auto Shop Lab III. 4 Credits.
Emphasizes advanced engine performance theory and practice. Includes automotive service work in a live shop setting. This is a capstone course and the third course in a three-course sequence. Prerequisite: CG 209. Audit available.

AM 280A. Cooperative Education: Automotive Service. 1-12 Credits.
Includes automotive service work in a live shop setting performing diagnostic and repair work supervised by on site professional and program instructor(s). Emphasizes independent learning and workplace skills with limited instruction. Requires work mastered at an automotive repair facility. May be taken three times for credit. Prerequisites: CG 209 and Department permission required.

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 or 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 aircraft maintenance subjects including power tools, shop equipment, aircraft hardware, fluid lines and fittings, non-destructive testing methods, heat treatment, aircraft cleaning, and corrosion control. Prerequisites: Placement into RD 90 or higher; placement into WR 90 or higher; AMT 101 with a minimum grade of "C" or higher 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 is 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 device. 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.

Portland Community College 263
AMT 122. A&P Shop Practice. 1-4 Credit.  
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 Rotocraft 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 Rotocraft 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 135. Airplane: Instrument Flight. 4 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 Rotocraft Helicopter knowledge and practical tests. Flight training fees apply and 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.

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.  
Begin 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 Rotocraft 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 crosscountry 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 and preparation in knowledge and skills that are directly related to Aviation Science 200-level airplane or helicopter flight courses. Areas covered include weather, flight planning, maneuvers, weight and balance, aircraft performance and lesson preparation techniques. Students must be enrolled in this class if they are working towards completion of a flight course.

AVS 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 off airport operations required for commercial pilots. Includes training for the Instrument rating. The AVS 211, 212, 213, 214 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 153 or AVS 155. Coreq: AVS 207.

AVS 216. Helicopter Advanced Commercial. 5 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. Corequisite: 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. Prerequisites: 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 instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 140. Audit available.

AVS 235. Airplane: Flight Instructor Flight. 2 Credits.
Provides a structured environment to learn to fly the aircraft from the instructor’s seat. Learn to plan, conduct and to assess flight performance. Prerequisite for the FAA Flight Instructor practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232 sequence is an equivalent alternative to this course. Prerequisites: AVS 224 or AVS 225. Corequisite: AVS 207 and AVS 230.

AVS 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 Instruction knowledge test. Flight training fees apply and cover a specific amount of training; additional funding may be required. Prerequisite: AVS 225. Corequisites: 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.

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. Corequisite: AVS 207.

AVS 244. Airplane CFI 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. Helicopter Pilot Performance. 1 Credit.
Designed to expose students to Cockpit Resource Management. Focuses on workload management and check list usage. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: 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.
Includes flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 150. Audit available.

AVS 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 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 215. Corequisites: 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.

Biology

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.

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/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

Portland Community College 265
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 3.25 GPA. 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, Science, Math, Computer Science/ASOT-B.

BI 102. Biology. 4 Credits.
Prerequisite: BI 101. A laboratory course designed to introduce students to the study of cells, cell division, genetics, reproduction and development, and evolution. Designed as a laboratory science course for non-biology majors. The second course of a three-semester 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/AAT, 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.
Prepares students for advanced study in biology. A laboratory course designed to introduce students to the study of cells, cell division, genetics, reproduction and development, and evolution. Designed as a laboratory science course for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available. 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, Science, Math, Computer Science/ASOT-B.

BI 104. Cell Biology for Health Occupations. 5 Credits.
Prerequisite: BI 101. A laboratory course designed to introduce students to the study of cells, cell division, genetics, reproduction and development, and evolution. Designed as a laboratory science course for non-biology majors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and BI 101. Audit available. 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, Science, Math, Computer Science/ASOT-B.

BI 112. Introduction to Human Anatomy & Physiology I. 4 Credits.
Surveys anatomical terminology, basic chemistry, cell structure and function, principles of inheritance, and laboratory skills. Includes topics and skills required to continue Anatomy & Physiology II. 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 113. Introduction to Human Anatomy & Physiology II. 4 Credits.
Surveys the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive and urinary systems with some coverage of human development, human genetics, and immunology. Includes lectures, discussions and laboratories. Prerequisite: BI 112. 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, Science, Math, Computer Science/ASOT-B.

BI 141. Habitats: Life of the Forest. 4 Credits.
Examines the structure and function of Oregon forest ecosystems. Covers distribution and interactions of plant and animal communities, 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/AAT, 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.
Examines the structure and function of Oregon forest ecosystems. Covers distribution and interactions of plant and animal communities, 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 145. Intro. to Fish and Wildlife Conservation and Management. 4 Credits.
Covers the basic principles 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 101H 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 geologic formation 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 the soil food web, composting and compost tea, and the basics of biogeochemical cycling. Explores the structure and function of soils including the soil food web, composting and compost tea, and the basics of biogeochemical cycling. Audit available.

BI 200A. Principles of Ecology: Field Biology. 2 Credits.
Introduction to concepts of ecology. Includes laboratory study of selected organisms, their interactions with their environment, and the basic principles of ecology. Course explores the application of biological principles to other disciplines. Includes laboratory study of selected organisms, their interactions with their environment, and the basic principles of ecology. Audit available.

BI 200B. Principles of Ecology: Field Biology. 4 Credits.
Introduces the study of the scientific method, cellular chemistry, cell structure and function, principles of inheritance, and laboratory skills. Includes topics and skills required to continue Anatomy & Physiology and Microbiology. 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 200C. Principles of Ecology: Field Biology. 6 Credits.
Introduction to basic concepts of ecology. Includes laboratory study of selected organisms, their interactions with their environment, and the basic principles of ecology. Course explores the application of biological principles to other disciplines. Includes laboratory study of selected organisms, their interactions with their environment, and the basic principles of ecology. Audit available.
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 premed, pre-dental, chiropractic, pharmacy, and related fields. Recommended. High school biology and chemistry within the past seven years. Prerequisites: WR 115 or RD 115 or equivalent placement test scores, and MTH 95 or higher. Prerequisite/Concurrent: CH 151 or higher or pass the Chemistry 151 competency exam or instructor permission. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/ASOT-B, Science, Math, Computer Science/AGS, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, 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/AAOT, Science, Math, Computer Science/AGS, 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/AAOT, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 222. 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). Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AGS.

BI 231. Human Anatomy & Physiology I. 4 Credits. Introduces basic anatomical and physiological terms, tissues, the integumentary, skeletal, muscular and nervous systems including nervous histology, physiology, spinal cord and nerves. Includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. This is the first course in a three-course sequence. Prerequisites: WR 115, RD 115 and MTH 65 or equivalent placement test scores, and BI 112 or (BI 211 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/AAOT, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

BI 232. Human Anatomy & Physiology II. 4 Credits. Continues the study of the nervous system, including brain, cranial nerves, and autonomic nervous system. Introduces the endocrine, cardiovascular and immune systems. Includes lecture discussions complemented by laboratories involving microscopy, animal dissection, physiological exercises and computer based exercises. This is the second course in a three-course sequence. Prerequisite: BI 231. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.


BI 241. Pathophysiology. 3 Credits. Lecture/discussion presentation of alterations in homeostasis, alterations in cellular function; and diseases of the immune, muscular, skeletal, integumentary, nervous, cardiovascular, respiratory, digestive, endocrine, urinary, and reproductive systems. Prerequisites: BI 231 and 232. BI 233 is either a prerequisite or may be taken concurrently. Audit available.

BI 280A. Cooperative Education: Biology. 1-10 Credit. Offers relevant experience in the field or laboratory in an area of biology or environmental sciences. Provides an opportunity to make a cooperative education training agreement with an instructor, an employer/supervisor, and a cooperative education specialist. Prerequisite: BI 101 or BI 211, and instructor permission. Audit available.

BI 287. Introduction to Immunology. 4 Credits. Introduces the principles of immunology including: development of the immune system, innate immunity, immunoglobulin structure and genetics, antigen-antibody reactions, the major histocompatibility complex reactions and antigen presentation, T cell receptors (genetics, structure, selection), T cell activation and effector functions, anergy and apoptosis, cytokines, phagocytic cell function, immune responses to infectious organisms and tumors, autoimmune diseases, endocrine, cardiovascular and immune disorders. Prerequisites: BI 112 or (BI 211 and BI 212) Audit available.

BI 298. Independent Study. 1-4 Credit. Provides an opportunity for students to work independently on an advanced individualized area of study within biology under the sponsorship and guidance of a biology faculty member. Recommend: Prior study in biology. Prerequisites: Instructor permission. Audit available.

BIOMGmt of Zoo Animals

BMZM 100. Introduction to Zoo Science. 2 Credits. Examines the history and mission of zoos, their roles in conservation, zoo structure and governance, and career opportunities. Introduces the taxonomy and general characteristics of animals with a focus on taxa commonly encountered in zoos. Prerequisite: WR 121. Department permission required. Audit available.

BMZM 101. 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.

BMZM 105. Comparative Vertebrate Anatomy and Physiology I. 4 Credits. Presents a comparative approach to structure, function, and evolution of the vertebrate classes. Examines anatomy 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.

BMZM 106. Comparative Vertebrate Anatomy and Physiology II. 4 Credits. Presents a comparative approach to structure, function, and evolution of vertebrate organ systems with emphasis on special senses, circulatory, respiratory, digestive, urinary, reproductive, and endocrine systems. Includes laboratory dissections of representative vertebrate specimens. Prerequisites: BMZM 105. Department permission required. Audit available.

BMZM 107. Zoo Horticulture. 4 Credits. Explores the practical importance of plants in a zoo environment. Covers plant identification and selection for landscape and exhibit design, hands-on skills in gardening and water management, identification of browseable and toxic plants, plant conservation, and integrated pest management. Department permission required. Prerequisite: BMZM 110. Audit available.

BMZM 110. Animal Nutrition. 4 Credits. Introduces various types of nutrients, the basic principles of nutrition as applied to exotic animals, principles of diet formulation, and important nutritionally caused diseases. Explores nutritional needs of orphaned animals, geriatric animals and nutrient requirements across taxa. Prerequisites: MTH 65 and (CH 151 or CH 104 or higher). Department permission required. Audit available.

BMZM 150. Captive Population Management. 4 Credits. Introduces basic principles of captive population management including reproductive and genetic management, animal relocations, and collection and research planning with the use of studbooks and various cooperative groups. Prerequisites: BMZM 101. Department permission required. Audit available.

BMZM 201. Zoo Biology & Management II - Amphibians and Reptiles. 4 Credits. Examines the diversity of avian taxa and reptiles and how this relates to their captive husbandry and management needs and conservation issues. Prerequisite: BMZM 101. Department permission required. Audit available.

BMZM 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: BMZM 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 220. Veterinary Procedures and Treatments for Zoo Keepers. 4 Credits.
Examines the critical importance of observation plus veterinary treatment
techniques for zoo animals. Includes preventative health care and identification
of health problems, restraint, immobilization, and transport, administration of
prescribed medication, and care of geriatric and neonate animals. Prerequisites:
BMZA 106. Department permission required. Audit available.

BMZA 231. Introduction to Animal Behavior. 4 Credits.
Introduces the concepts of animal behavior with particular emphasis on species
exhibited within zoos. Prerequisite: BMZA 101. Department permission required.
Audit available.

BMZA 232. Zoo Animal Behavior Management. 2 Credits.
Promotes the use of environmental enrichment, operant conditioning and training,
and other behavioral management techniques to enhance the physical and
psychological well-being of captive animals and to effectively carry out the missions
of the facility. Prerequisite: BMZA 231. Department permission required. Audit
available.

BMZA 240. Zoo Water Quality Management. 2 Credits.
Introduces the fundamental principles and application of water management
techniques to water systems typically used in zoos. Prerequisites: MTH 65 and
(CH 113 or CH 104 or higher). Department permission required. Audit available.

BMZA 250. Conservation Biology. 4 Credits.
Explores the challenges of declining biodiversity and examines the role of zoos
in contributing to population and habitat conservation. Provides field experience
with species conservation programs. Prerequisites: BMZA 101. 201, 202, 203.
Department permission required. Audit available.

BMZA 255. Wildlife Education Management. 4 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. Audit available.

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.

BMZA 270. Zoological Professional Development Seminar. 2 Credits.
Provides advanced exploration and discussion of 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.

BMZA 280A. 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.

Biochemistry Technology

BIT 102. Current Topics in Bioscience Technology, 2 Credits.
Provides an overview of current topics in Bioscience Technology. Includes recombinant DNA technology, bioremediation, forensics, genetically modified organisms (GMO), stem cell technology, pharmaceutical drug discovery and medical devices as well as ethical and legal issues surrounding biotechnology today. Recommend: BI 112 or BI 211 or equivalent. Audit available.

BIT 105. Safety in the Bioscience Workplace. 2 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.

BIT 107. Bioscience Lab Math. 2 Credits.
Develops mathematics skill and problem-solving related to work in a bioscience
laboratory. Uses biomanufacturing environment. Includes calculations for solution
preparation, analysis and manipulation of molecules and cells, analysis and
interpretation of data and commonly used statistical methods. Prerequisite: MTH 65
or placement into MTH 95. Recommend: Prior or concurrent college-level course in
Chemistry, or BI 112 or 211. Audit available.

BIT 109. Basic Laboratory Techniques and Instruments. 5 Credits.
Introduces fundamental principles and practices for the bioscience laboratory.
Principles of quality documentation, safety, and precise communication will be
emphasized throughout, in the context of technical activities that include solution
preparation, instrumentation for measurements (weight, volume, temperature,
pH, conductivity and spectroscopy), assay techniques and routine laboratory
maintenance. Recommend prior or concurrent college level course in Chemistry,
or BI 112 or 211, and MTH 65. Prerequisite: Placement into WR 115 and RD 115.
Prerequisite or concurrent enrollment in: BIT 105 and BIT 107.

BIT 125. Quality Systems in Bioscience Technology. 2 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 GMP), 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. Emphasize 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.
Recommend: 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 immunoglobin, obtaining, purifying
and labeling antibodies, and using antibodies in a variety of common applications (ELISA, Western blot, immunoprecipitation and immunochemistry, antibody-based affinity chromatography). Prerequisite: BIT 109 or 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, quantitation of DNA, ligation and transformation procedures, and analysis by restriction digest, blot hybridization and PCR. Prerequisites: BIT 109 or BIT 110; and any of the following: BIT 101, BIT 102, BI 112, BI 212 or BI 234, or instructor permission.

BIT 205. Bioseparations. 5 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 purifications. This laboratory intensive course will focus on
issues of recovery and yield, step-to-step analysis and troubleshooting, as well
as documentation and reporting procedures and results. Prerequisite: BIT 205 or
instructor permission.
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 BCT 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 problems through collaborative learning. Learners will also develop, articulate and document their own problem solving strategies. Exploration of construction problems will be limited to light framing, concrete, finish carpentry and cabinetmaking. Prerequisite: Placement into MTH 20 or department approval. Audit available.

BCT 105. CAD for Constructors I. 3 Credits.
Introduces Computer Aided Design (CAD) based software. Develops skills and vocabulary necessary to generate construction drawings, and modify existing 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 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, cobb and ramed 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 118. Introduction to Space Planning and Design. 2 Credits.
Covers elements and principles of color and design as they apply to functional and aesthetic space planning for kitchens, baths and storage areas of a house. Includes basic presentation skills and processes to incorporate design ideas, floor plans and materials presentation boards. Prerequisite/concurrent: ARCH 110. 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, sills 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, framed arched 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 joint, 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 cinder block, cement composite horizontal lap, cedar shingles, fancy cut shingles and cultured stone. Covers ceiling soffits, door, window and corner trims. Includes roofs 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 structural engineering. 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 resource 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 135. Residential Building Codes. 2 Credits.
Introduces land use zoning and international/Oregon residential building codes. Includes selected portions of the code. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BCT 136. Commercial Building Codes. 2 Credits.
Introduces land use zoning and international Commercial building codes. Includes selected portions of the code. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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, reprints and finance, and the relationship between those business activities and the planning and management methods for achieving objectives. Presents the general legal requirements, accounting and record keeping practices. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

BCT 203. Interior Finish. 6 Credits.
Drywall: Covers related codes, estimating materials and installation methods in residential drywall. Includes drywall products, tapes, 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 204A. Construction Estimating - Residential. 3 Credits.
Introductory class in construction estimating concentrating on basic residential estimating techniques. Using plans for a small house, students will learn how to organize and prepare estimates, quantity take-off and pricing, and fundamentals of bid assembly. Prerequisite: BCT 102 and BCT 104; or instructor permission. 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. CAD for Constructors II. 3 Credits.
Explores and expands on the study of CAD based software. Covers file management, drawing tools and rendering methods used to create orthogonal project documents. Introduces software used in the construction industry for construction documents and active project management. 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 Printreading. 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, assemble 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 framework for learning experience. Prerequisite: BCT 216 or BCT 219. Audit available.

BCT 218. Woodworking Projects. 2 Credits.
Designed for independent work on cabinet projects. Students are required to present shop drawings for instructor approval before beginning. Students must supply their own materials. Instructor will evaluate student knowledge of hand and power tool safety at first class meeting to determine whether skill level is appropriate for independent work. Audit available.

BCT 219. Cabinetmaking I. 6 Credits.
Learners will become familiar with the skills, materials, hardware and equipment necessary to produce industry standard cabinets. Students will learn and demonstrate the safe use of cabinetmaking hand and power tools. Students will draw shop drawings and estimate materials for cabinetmaking jobs. Learners will develop cabinetmaking skills by constructing instructor designed cabinet projects. Audit available.

BCT 220. Cabinetmaking II. 6 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 stile & rail door making. Cabinet installation methods for kitchens and baths are covered including room preparation, cabinet layout, cabinet storage, cabinet and countertop installation, appliance installation, and moldings. Kitchen and bath design skills will be developed by hand drafting assigned case studies. Prerequisite: BCT 219. Audit available.

BCT 221. Construction Law for the Contractor. 3 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 building 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, strengths, 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, stair railings and tread caps. Emphasizes the methods used to construct finished 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 wainscoting and various interior window trim treatments; and in plastic laminate countertop fabrication. Covers estimating techniques used to establish labor and material costs associated with finish carpentry. A student may not receive credit for both the BCT 223, 224 and 226 series and BCT 203. Audit available.

BCT 229. Introduction to Kitchens and Baths. 4 Credits.
Explores the history and trends of the kitchen and bath industry. Focuses on basic kitchen & bath layouts and specification of specialized equipment, materials and surfaces required for safe and functional kitchens & baths. Includes cabinet systems, appliances, equipment and surfacing materials. Prerequisite: ARCH 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. Covers room preparation, cabinet layout. cabinet storage, appliance installation, overlay cabinets and市场经济 requirements. 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 student experience in real work conditions and helping determine career choices. Department permission required.
BCT 280C. Cooperative Education BCT Design/Build Remodeling. 1-5 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.

Building Inspection Tech
INS 126. Plan Review Software. 2 Credits.
Introduces Plan Review software as a tool for online review of plan submittals for building permits. Prerequisite: WR 115 and MTH 20 or higher or equivalent placement test score. Audit available.
INS 151. International Residential Code Structural I. 4 Credits.
Covers International Residential Building Codes and building inspection practices. Audit available.
INS 152. International Residential Code Mechanical. 2 Credits.
Covers residential building mechanical systems code requirements as detailed in the International Residential Building Code manual. Prerequisite: WR 115 and MTH 20 or higher or equivalent placement test score. Audit available.
INS 201. Plans Examination-Commercial. 4 Credits.
Covers commercial plans examination and code compliance for building permit applications. Includes procedures for review of plan submittals and code administration. Prerequisite: ARCH 162 and INS 252 and (MTH 60 or equivalent placement test score). Audit available.
INS 220. International Building Code Fire and Life Safety. 3 Credits.
Addresses fire and life safety requirements in the International Fire and Building codes. Includes building occupancies, exit systems, hazardous materials' regulations, site access, water availability, and fire protection systems. Prerequisite: INS 201 and INS 252. Audit available.
INS 251. International Building Code I. 4 Credits.
Covers nonstructural regulations of the International Building Code. Includes administration, occupancy classification, building area & height, construction types, interior environments, and fire resistive standards for small commercial and multi-story structures. Prerequisite: WR 115 and MTH 20 or higher or equivalent placement test score. Audit available.
INS 252. International Building Code II. 3 Credits.
Continues the study of the International Building Code. Includes fire protection and egress systems, accessibility, sanitation, and building materials. Prerequisite: INS 251. Audit available.
INS 253. International Building Code III. 3 Credits.
Introduces the requirements for structural engineering, within the International Building Code, as applied to small commercial structures of three stories and less. Prerequisites: WR 115 and MTH 20 or higher or equivalent placement test scores. Audit available.
INS 255. International Mechanical Code I. 2 Credits.
Covers International Mechanical Code regulations for permitting. Includes general requirements, exhaust systems, kitchen hoods and duct systems. Prerequisites: WR 115 and MTH 20 or higher or equivalent placement test scores. Audit available.
INS 256. International Mechanical Code II. 3 Credits.
Covers International Mechanical Code regulations for permitting. Includes combustion air, chimneys and vents, refrigeration, and specific appliance systems. Prerequisite: INS 255. Audit available.
INS 257. International Fuel-Gas Code. 3 Credits.
Covers the International Mechanical Code. Includes code requirements, application of code to inspection requirements, and methods for inspecting mechanical installations. Prerequisites: WR 115 and MTH 20, or higher or equivalent placement test score. Audit available.
INS 280. CE: Field Experience Inspection. 1-10 Credit.
Provides an opportunity to work at approved job sites. Explores a variety of experiences and placement opportunities as are currently available for individuals. Requires coordination with student, supervisor, instructor and cooperative education specialists. Prerequisite: Department approval.
INS 280B. Cooperative Education: Field Experience. 1-5 Credit.
Work on an approved job site as a tool for online review of plan submittals for building permits. Prerequisite: WR 115 and MTH 20 or higher or equivalent placement test score. Audit available.

Business Administration
BA 98. Business Administration: Skills and Issues. 1 Credit.
Introduces strategy and management, management accounts, controlling, and communication. Examines a short-term management scenario. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. 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.
Provides double-entry accounting as related to service and merchandising business. Covers accounting cycle, including journalizing, posting to the general ledger, preparation of financial statements, petty cash, bank reconciliations, combined journal, special journals and payroll. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.
BA 113. Business Credit Principles. 3 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. Prerequisite: WR 90, RD 90, and MTH 20 or equivalent placement test scores. Audit available.
BA 131. Introduction to Business Technology. 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.
Survey 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 150. Intro to Entrepreneurship. 4 Credits.
Introduces the managerial practices of successful entrepreneurship in all types of organizations. Evaluates the business skills, leadership skills, traits, and components necessary to successfully operate an entrepreneurial venture. Reviews the challenges and rewards of entrepreneurship. Examines entrepreneurial businesses in the United States and their impact on the economy. Considers recent trends in social entrepreneurship. Prerequisites: WR 115, RD 115 and MTH 20 or instructor permission. Audit available.
BA 177. Payroll Accounting. 3 Credits.
Learn fundamental skills and basic knowledge in the area of business payroll. The focus of the course is primarily in the following areas: payroll and personnel record keeping, calculation of gross pay using various methods, calculation of Social Security and Medicare taxes, calculation of federal and state income taxes, calculation of federal and state unemployment taxes, journalizing and posting payroll entries, and completing various federal and state forms. Prerequisites: BA 111 Introduction to Accounting or BA 211 or instructor permission. Recommended: MTH 30 Business Mathematics, and Microcomputer experience. Audit available.
BA 203. Introduction to International Business. 3 Credits.
Explores processes of international trade, whether the company is an importer, exporter, or a multinational firm. Forms a basis for further study and specialization in the international business field. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. 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: BA 101 and WR 121, and computer literacy as demonstrated through completion of BA 131 or CAS 133. 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.
Introduces concepts and skills for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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. Recommend: BA 111 or BA 211 and CA 113. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 209. Introduction to Grant Writing. 4 Credits.
Examines the role of the consumer in our economy, problems of financing family and community relationships, and creating successful funding proposals. Demonstrates and practices basic sales techniques, explores communication and motivation as they relate to selling and examines the function of sales relative to 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 210. Advanced Accounting Spreadsheet Application. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 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: MTH 60 and BA 111. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 212. Principles of Accounting II. 3 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. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. 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 214. Basic Cost Accounting. 3 Credits.
Covers 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.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 222. Financial Management. 3 Credits.
Covers basic financial concepts and practices and includes analysis of company resources, types and sources of financing, forecasting and planning methods, and the roles of the money and capital markets. Recommended: BA 212, MTH 60. Prerequisites: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 223. Principles of Marketing. 4 Credits.
Provides a general knowledge of marketing emphasizing marketing mix elements and targets markets for consumer and industrial products, marketing strategies, customer behavior, market planning and promotion. Recommended: BA 101. Prerequisites: WR 115, RD 115 and MTH20 or equivalent placement test scores. Audit available.

BA 224. Human Resources Management I. 3 Credits.
Covers 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 225. 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 CA 113. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 234. International Marketing. 3 Credits.
Covers various principles and concepts of international marketing including techniques for identifying potential markets and assessing uncontrollable elements such as economic, political and sociocultural environmental factors. International marketing strategies related to product/service, pricing, promotion and distribution are examined. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 235. Social Media Marketing. 4 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 236. Product Management and Branding. 4 Credits.
Covers various principles and concepts of international marketing including techniques for identifying potential markets and assessing uncontrollable elements such as economic, political and sociocultural environmental factors. International marketing strategies related to product/service, pricing, promotion and distribution are examined. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 237. Fundamentals of Import/Export. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 238. Sales. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 239. Advertising. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 240. Nonprofit Financial Management and Accounting. 4 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 244. Introduction to Records Management. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 245. Principles of Retailing and E-tailing. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 249. Principles of Retailing and E-tailing. 3 Credits.
Examines motivations and procedures for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational. Examination of e-commerce in altering the structure of entire industries, and how e-commerce 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 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 CIS 245. Project management is a broad term that can include many areas of a business. Recommended: BA 101, MTH 20, 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. Recommended: 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 278. Eco-Innovation and Social Entrepreneurship. 4 Credits.
Introduces the social, economic and environmental pillars of sustainability, and social entrepreneurship within the business environment with a focus on global, domestic and internal business methods, practices and policies. Investigates sustainable business, social innovation and intrapreneurship evolution and trends. Includes opportunities to interact with local social entrepreneurs, analyze initiatives, and develop market-based solutions to social problems. Examines individual and corporate decision-making and best practices. Includes team projects and a community-based service learning experience. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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, management, advertising, 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. 1 Credit.
Refreshes 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.
Explores interactions in organizations by examining human perceptions, communications, small group dynamics and leadership. Includes dynamics of change, cultural diversity, substance abuse, work stress, ethics and social responsibility, and the challenges of globalization. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available.

BA 289. Marketing Capstone. 2 Credits.
Covers the development and presentation of a marketing plan in a team environment, drawing on concepts taught throughout the degree program. Focuses on the elements of planning, market research, development of positive team dynamics and the practical application of marketing techniques. Recommended: students should enroll in this course near the end of their degree program. Prerequisite: Department or instructor approval required.
CH 211. Introduction to Biochemistry. 4 Credits.
Introduces the chemistry of biological systems. Covers the structure and function of biological molecules as well as the chemistry of heredity, metabolism and biological energy. Prerequisites: (CH 106 or equivalent) or (CH 241 or equivalent). 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. For information about the CH151 Competency Exam see the description addendum in the CCOG. Prerequisites: MTH 111, WR 115, and RD 115 or equivalent placement test scores, and (CH 151 or pass the CH 151 Competency Exam). Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AATOT, Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 221H. General Chemistry I: Honors. 5 Credits.
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. For information about the CH151 Competency Exam see the description addendum in the CCOG. Prerequisites: MTH 111, WR 115, and RD 115 or equivalent placement test scores and (CH 151 or pass the CH 151 Competency Exam). Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AATOT, Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 222. General Chemistry II. 5 Credits.
Explores stoichiometry, chemical reactions and equations; thermodynamics; properties 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/AATOT, Science, Math, Computer Science/AAOT, 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; thermodynamics; 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/AATOT, Science, Math, Computer Science/AAOT, 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/AATOT, Science, Math, Computer Science/AAOT, 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; and 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/AATOT, Science, Math, Computer Science/AAOT, 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 alkynes, concerted reactions (Diels Alder), IR Spectroscopy, structure, reaction mechanisms and special topics as time and interest permit. 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. Prerequisite: (CH 221 or CH 221H), (CH 222 or CH 222H), and (CH 223 or CH 223H) or (CH 104, CH 105, CH 106). Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AATOT, Science, Math, Computer Science/AAOT, 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; organometallic compounds; amines and aromaticity; structure and chemistry of aromatic compounds; NMR, UV-Vis and Mass Spectroscopy; and special topics as time and interest permit. Prerequisite: CH 241. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AATOT, 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. Prerequisite: CH 242. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AATOT, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

CH 274. Chemistry Independent Study. 1 Credit.
Provides an opportunity to work independently on an individualized area of study within chemistry under the sponsorship of a 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/AOT, Arts and Letters/AAOT, Arts and Letters/AS, 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/AOT, Arts and Letters/AAOT, Arts and Letters/AS, 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. Covers such disciplines 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/AOT, Arts and Letters/AAOT, Arts and Letters/AS, 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 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.

Course Descriptions
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.

CMET 260. 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. Explores 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 in both two dimensions and three dimensions. Includes drawing complete free-body diagrams to solve engineering problems. Addresses external forces, moments of a couple, reactions, internal forces and moments. Covers friction for dry surfaces, moments of inertia and centroids. Corequisite: CMET 111. Prerequisites: MTH 60 and placement in WR 115. Department approval required. Audit available.

CMET 111. Portland Design: Brews, Bridges and Bikes. 4 Credits.
Enhances appreciation for design and engineering through the prism of three design topics that Portland is known for: coffee, bridges and bikes. Focuses on 'back of the envelope' engineering, problem solving, making and building, and professional skills and teamwork. Covers geometry and scientific calculator operations. Introduces the engineering technician profession and engineering ethics. Includes time in the MakerSpace. CMET labs and field trips. 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. Introduces plane analytical geometry 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 laws of thermodynamics, perfect gas law, properties of energy, and the considerations. Prerequisite: 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 roadways, 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 122. 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. Includes practical linear and curvilinear motion problem solving. Covers work-energy and impulse-momentum methods. Prerequisite: CMET 110 and CMET 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 concepts. 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/concurrent: WR 121. Audit available.

CMET 233. CET Applied Computer Aided Design. 3 Credits.
Provides advanced topics in civil engineering-oriented computer aided design and drafting meeting industry standards. Prerequisite: CMET 241; Prerequisite or concurrent: CMET 214. Audit available.

CMET 235. Machine Design. 3 Credits.
Examines fundamentals of machine design, including analysis and design of mechanical components. Covers shafts, fasteners, belt and chain drives, brakes, gears, springs and bearings. Includes predicting static and fatigue failures for various loadings and materials. Prerequisite: CMET 121, 226. Audit available.
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. CG 114 and BA 114 are equivalent. Only one may be taken for credit. Prerequisite: WR 90, RD 90, and MTH 20 or equivalent placement test scores. Audit available.

CG 130. Today's Careers. 2 Credits.
Exposes 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.
Provides tools and resources for making informed career decisions. Covers assessing career interest and readiness, skills, values, interests, personality, barriers, lifestyle, education and approaches to decision making. Covers how to research career information. Includes educational decision-making which covers determining a field or program of study. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 140B. Career and Life Planning. 2 Credits.
Provides tools and resources for making informed career decisions. Covers assessing skills, values, interests, personality, barriers, lifestyle, education and approaches to decision making. Covers how to research career information. Includes educational decision-making which covers determining a field or program of study. Prerequisites: Placement into WR 115 and RD 115. Audit available.

CG 140C. Career and Life Planning. 1 Credit.
Provides tools and resources for making informed career decisions. Covers assessing skills, values, interests, and personality toward making a career decision. Covers how to research career information 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. 2 Credits.
Introduces the causes, sources, and effects of stress (physiological, psychological, emotional, cognitive, and intrapersonal/interpersonal) from a personal and academic perspective. Facilitates application of tools and techniques to identify, prevent, and manage stressors to improve academic success. Recommended: Placement into RD 115 and WR 115. 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. Prerequisite: Instructor permission. Audit available.

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 teambuilding, goal-setting, role modeling, public speaking, time management, ethics, diversity, and customer service. Inspires the cultivation of a personal leadership vision and cross-cultural awareness, respect, and understanding. 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: Arts and Humanities/AAOT, Social Sciences/AS, 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-requirement: CG 280A. Course may be repeated.

CG 0693. Confidence Building. 1 Credit.
Explores the concept of self-confidence: how it is acquired, how it can be sabotaged, and how it can be changed. Develops strategies, tools and techniques to build a positive self-image. Audit available.

Communication Studies

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/AADT, 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 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.
Practical preparation and improvisation 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 public speaking 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/AADT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 111H. Public Speaking: Honors. 4 Credits.
Honors version of COMM 111. 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. GPA 3.25 minimum. Prerequisite: MTH 20 or equivalent placement test score, and WR 121. Audit available. This course fulfills the following GE requirements: Arts and Letters/AADT, 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, issues of bias, effects and destablizing and refuting 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/AADT, 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 analysis of 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: Arts and Letters/AADT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 204. Visual Communication for Media. 4 Credits.
Covers the theory and application of visual communication in media. Develops visual literacy and media skills for message creators/consumers. Critically examines visual message components, goals, effects and ethics. Current course is also offered as J 204; a student who enrolls in this course a second time under either designator will be subject to the course repeat policy. 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/AADT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

COMM 212. Voice & Diction. 4 Credits.
Explore 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 214. Interpersonal Communication: Process and Theory. 4 Credits.
Introduces interpersonal communication in different contexts in order to build and manage relationships. Focuses on message exchange in person-to-person interactions; emphasizes theoretical principles and their application. Concentrates on the development of communication skills to build communication competence in interpersonal contexts. Recommended: COMM 100. Prerequisite: WR 121 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AADT, 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 rules, 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/AADT, 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 related to verbal communication. Emphasizes the theories and types of nonverbal behavior including influential factors such as: voice, body movement, eye behavior, touch, space, time, smell, and physical and social environments. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AADT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
COMM 228. Mass Communication and Society. 4 Credits.
Survey of media 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, films 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/AAT, Arts and Letters/AS, 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 masculine and feminine communication styles and patterns. Discusses the differences between sex and gender and the impacts on perception, values, stereotypes, language use, nonverbal communication, power and styles of conflict management in human relationships. Covers the influence of both interpersonal and mass communication on the social/cultural construction of gender identity and gender roles. Offers strategies for improving communication in gendered relationships. 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/AAT, Arts and Letters/AS, 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 in a hybrid course -- both classroom and on-line 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. 5 Credits.
Provides 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 101, CTT 103, 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.

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. Includes instruction in 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-points, 3-D entity creation, external references, and paper/model space drawing manipulation. Prerequisite: CADD 126. Audit available.

CADD 160. Drafting Fundamentals. 4 Credits.
Introduces skills needed to produce 2-D mechanical drawings using hand sketching techniques on grid paper. Includes orthographic projection, lettering, auxiliary views, sections and pictorial drawings. Covers dimensioning basics. Audit available.

CADD 165. Intermediate Drafting. 4 Credits.
Continues material presented in CADD 160. Introduces geometric construction, fasteners, keys/keysheets 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, surface basics, modeling 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 v-points, complex extrusions, regions, shading and rendering, 3D solid models, and supportive AutoCAD 3D databases. Prerequisite: CADD 136. Audit available.

CADD 255. Kinematics Drafting. 3 Credits.
Introduces mechanisms that translate motion and force, includingcams, gears, belts/pulleys and chains/sprockets. Introduces components such as pawls, ratchets, linkages and levers. Includes drawings of stock (shelf) items and custom designs. Prerequisite: 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 tablet 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 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, surface mic, managing data and the Engineers Notebook. Prerequisite CADD 185; or department permission. 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, surface mic, managing data and the Engineers Notebook. Prerequisite CADD 185; or department permission. Audit available.
In order to provide a concise and clear representation of the text, here is a structured list of course descriptions:

- **CAS 100A. Computer Success Skills. 3 Credits.**
  Introduces essential computer skills to develop a basic understanding of computers, file management and word processing. Includes an overview of Internet basics and an introduction to the online platform D2L. Covers current computer vocabulary, basic computer tasks, and keyboarding skills. Recommended: (WR 80 and RD 80) or (ESOL 252 and ESOL 250) or equivalent placement test scores. Audit available.

- **CAS 101. Introduction to Website Development & Design. 1 Credit.**
  Explores the different roles, skill sets, jobs, and tools associated with the website development and design industry. Introduces the Website Development & Design program, including course options, software, and equipment requirements. Introduces online portfolio requirements for Website Development & Design program. Recommended: CAS 131 or equivalent file management and word processing experience, placement into RD 115 or WR 115.

- **CAS 103. Introduction to Windows. 1 Credit.**
  Introduces the Microsoft Windows operating system on personal computers. Includes file management, basic word processing, accessories, and introduction to the PCC portal. Recommended: Placement into RD 115 and WR 115. Audit available.

- **CAS 104. Basic Internet Skills. 1 Credit.**
  Introduces terminology, web browsers, search techniques, and communication tools. Audit available.

- **CAS 106. Introduction to HTML. 1 Credit.**
  Introduces basic concepts of creating simple web pages with HTML. Develops knowledge of working with HTML tags using a text editor, and file transfer Protocol (FTP) using an FTP Program. Recommended: Placement into RD 115 and WR 115; CAS 103 or CAS 133 or equivalent file management experience. Note: Students pursuing a web certificate or degree should take CAS 206 or CAS 111D instead. Audit available.

- **CAS 109. Beginning PowerPoint. 1 Credit.**
  Introduces the basic features of Microsoft PowerPoint, producing multimedia slideshows for presentations to be delivered on a projection system, personal computer, or automated to run independently on a kiosk. Explores informational, educational, business, and personal presentations. Includes animations, transitions, and designs. Recommended: Placement into RD 115 and WR 115. Audit available.

- **CAS 110. Introduction to Web Graphics. 1 Credit.**
  Introduces the creative basics for using 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 XHTML, 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 111W. Beginning Website Design: 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 themes, creating efficient site navigation using menus and categories, organizing a site, enhancing a site with plugins and widgets, integrating a blog, and creating user functionality with user logins. Covers basic HTML and CSS and site planning. Recommended: 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 basic keyboarding techniques. 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 accurate keyboarding and accurate proofreading of business letters, memos, reports, and tables. Improves and increases speed and accuracy of keyboarding skills. Recommended: Placement into RD 115 and WR 115 or higher, OS 220, and keying 45 wpm by touch. Prerequisite: CAS 216 or instructor permission. Audit available.

- **CAS 132. 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 Cloud software including Bridge, Photoshop, Dreamweaver, Illustrator, Fireworks, and Acrobat. Includes using the software to edit photos, create basic websites, design web graphics, and organize web projects. 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 hear its/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. Stresses 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 175E. Intro Web Animation. 3 Credits.**
  Introduces the creation of animated and interactive web content using industry-standard software that can be viewed on any web supported device. Includes producing animated and interactive web projects using text, shapes, and imagery. Prerequisite: CAS 206. Audit available.
CAS 175F. Introduction to Animation: Flash. 3 Credits.
Introduces the basic features of Adobe Flash to create and edit 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 current techniques, skills and concepts used to optimize the searchability of web pages on the Internet. Covers the creation of a tailored Search Engine Optimization (SEO) strategy, including on-page and off-page search engine optimization, meta data, search analysis, traffic generation, online tools and SEO software. Explores client side SEO. 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, organizing a site using components and modules, enhancing a site with plugins and extensions, and creating user functionality with user logins. Prerequisite: CAS 215 or instructor permission. 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 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 206. Principles of HTML and CSS. 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 multipage website using these technologies. Recommended: CAS 133 or equivalent file management and word processing experience; placement into RD 115 and WR 115. Audit available.

CAS 211W. WordPress Customizations and Theme Building. 3 Credits.
Covers the modification and customization of existing WordPress themes using child themes. Includes using a theme framework to create new, unique themes. Explores options frameworks for dashboard enhancement. Introduces the creation of page templates, static sites, and other widget areas. Covers responsive CSS grids, HTML5 structural tags, and WordPress functions and hooks. Includes e-commerce and SEO concepts and plugins, along with techniques for backing up and moving WordPress sites. Recommended: CAS 111W or CAS 206 or a working knowledge of WordPress, HTML5, and CSS; placement into RD 115 and WR 115. 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 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 HTML5 windows. Prerequisite: CAS 206 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 242, and CJS 122 or equivalent; placement into RD 115 and WR 115. Audit available.

CAS 215. Intermediate CSS and Preprocessors. 4 Credits.
Extends skills in CSS to an intermediate/advanced level. Includes responsive design, grids, transitions/transforms, and CSS preprocessors, such as SASS or LESS, to save time, improve code organization, and make code easier to maintain. Recommended: placement into RD 115 and WR 115. Prerequisite: CAS 206 or instructor permission. 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 columns, 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. Recommend: 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 organizational site available.

CAS 222. Integrated Website Design. 4 Credits.
Reinforces industry-standard practices for creating professional websites. Focuses on user acceptance testing, usability testing, social media integration, accessibility, form processing using a database, JavaScript/Query interactivity and mobile-first web design. Includes troubleshooting of existing websites and working in production/deployment environments. Prerequisite: CAS 216 and (CAS 223 or CIS 133W) and (CAS 225 or CIS 195P). Audit available.

CAS 225. PHP and MySQL for Designers. 4 Credits.
Develops skills for finding, utilizing and modifying PHP and MySQL resources on the Internet. Explores ways to personalize web sites for visitors with a variety of dynamic web-based technologies 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 Adobe Publisher to design and create effective publications that combine text graphics, illustrations, and/or photographs such as announcements, fliers, advertisements, and reports. Covers the processes to create, import, and manipulate text, graphics, and/or templates through program tools and features. Recommended: Placement into RD 115 and WR 115; prior knowledge and use of Windows technology. Audit available.

CAS 232. Desktop Publishing: InDesign. 3 Credits.
Introduces Adobe InDesign, a desktop publishing software, to design and create effective publications such as announcements, fliers, advertisements, and reports. Covers the processes to create, import, and manipulate text and/or graphics through the 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 233. Beginning Illustrator. 3 Credits.
Introduces Adobe Illustrator to create vector graphics and illustration components for the web. Covers the processes to create, import and manipulate text and/or graphics through the use of software features. Recommended: CAS 133 or equivalent file management experience. Audit available.

CAS 242. UX/UI Design for the Web. 3 Credits.
Introduces user experience (UX) and user interface (UI) design for the web. Covers gathering requirements, research, project management and user-centric design concepts to produce HTML and CSS web pages that display accurately on any web-supported device. Includes the creation of user personas, content inventories, mood boards, and low and high fidelity wireframes. Covers web standards for color management, design principles, and usability best practices. Prerequisite: CAS 110, CAS 206. Prerequisite/concurrent: CAS 215. Audit available.

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 265. Emerging Web Tools and Trends. 3 Credits.
Explores emerging tools and trends in Website Development and Design and their applicability to employment. Prerequisites: CAS 206 and CAS 215. Audit available.
**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: CIS basics; benefits and risks of online living. 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 IT 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 ethics 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 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 programming techniques. Prerequisite: CIS 122 or instructor permission. Audit available.

**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#.NET 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 135M. Mobile Application Programming for Android. 4 Credits.**
Introduces Android mobile programming, including Android layout and Activity components, how to use Androids Camera API, and Android's built-in programming languages. Covers Android application development phases, terminologies, application design, and coding. Recommended: prior completion of or concurrent enrollment in CAS 133J. 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 Style Sheets. Discusses the advantages and disadvantages of XML design formats of Flat Catalog, Russian Doll and Venetian Blind. Includes HL7. Recommended: CIS 122 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 design, switching, management, TCP/IP protocols, and 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.**
Introduces the webserver environment. Focuses on the knowledge and skills necessary to understand the configuration and management of web servers running Linux as the underlying operating system. Covers Internet connections, file transfers, user/group management and security systems. Investigates web system logs, web content backup strategies, and web site performance. Prerequisites: CIS 121 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, 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. Prerequisites/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 jQuery. 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 234A. Real-World Programming. 4 Credits. Introduces real-world programming using agile software development methodologies. Includes a comprehensive team project utilizing object-oriented programming languages and relational databases. Prerequisites: CIS 233B or CIS 233J or CIS 233N or CIS 233W or CIS 295P, and CIS 275; or instructor permission. Audit available.

CIS 234B. 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 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. Includes using an Apache Tomcat web server configuration to learn 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 indexers; LINQ, streams, generic collections, ADO.NET databases, timers, and multithreading. Recommended: Experience with UML class diagrams, object-oriented concepts and a two-course sequence (or proficiency) in an object-oriented programming language. Audit available.

CIS 234S. Web Application Development Using .NET. 4 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 scalable inventories and generate ad revenue. Shows how web metrics of the various web analytics trade. Provides a solid background in critical issues and technologies related to website optimization. Audible 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. Covers preparation for an enterprise administrator position utilizing Microsoft server operating systems. Focuses on the knowledge and skills necessary to install, configure and manage an Active Directory domain consisting of Microsoft Windows servers and workstations. Prerequisites: CIS 140M or instructor permission/concurrent. Audit available.


CIS 245. Project Management - Information Systems. 4 Credits. Study practical approaches for managing, planning, organizing and implementing Information Systems projects using modern management techniques. Complete hands-on projects requiring management of project resources, scope, time-line, cost, scheduling, human and other resources. Use Microsoft Project and other project monitoring tools. This course is one of the Project Management series that includes CAS 220, MSD 279, and BA 255. Project management is a broad term that can include many areas of business. Recommended: CIS 122, MS 279, and CAS 220. Audit available.

CIS 246. Structured Systems Design. 4 Credits. Provides an 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 Internet) and data administration. Prerequisite: CIS 133B or CIS 133N or CIS 133J or CIS 133W or CIS 195P or CIS 161 or CIS 125D or instructor permission. Audit available.

CIS 276. Advanced SQL. 4 Credits. Focuses on design, development and implementation of SQL programming for all aspects of relational database applications including client/server and Internet databases. Covers the writing of complicated interactive and embedded SQL statements and the implications of multi-user database applications. Recommended: two-term programming language sequence. Prerequisites: CIS 275 and (CIS 133B or CIS 133N or CIS 133J or CIS 133W or CIS 195P or CIS 161 or CIS 125D) 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 data policy, identification and authorization methods (including user and user requirements. Students will prepare a feasibility assessment and develop system requirements for an assigned project. Recommended: One class in a high-level programming language and WR 227. One 200-level business administration course. Additional lab hours may be required. Audit available.

CIS 282. Health Informatics Environment Simulation. 4 Credits. Focuses on design, development and implementation of SQL programming for all aspects of relational database applications including client/server and Internet databases. Covers the writing of complicated interactive and embedded SQL statements and the implications of multi-user database applications. Recommended: two-term programming language sequence. Prerequisites: CIS 275 and (CIS 133B or CIS 133N or CIS 133J or CIS 133W or CIS 195P or CIS 161 or CIS 125D) or instructor permission. 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, system integration and programming methods. Object oriented programming and a bachelors degree will be covered. Prerequisite: CIS 135T, CIS 140M and CIS 276. Additional lab hours may be required. Audit available.

CIS 277O. Advanced Database Concepts in Oracle. 4 Credits. Covers concepts with Oracle including PL/SQL Standard PL/SQL, and PL/SQL 11g. 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: One class in a high-level programming language, CIS 233S, CIS 244 and CIS 275 or instructor permission. Audit available.

CIS 277R. 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 277T. Web Business Intelligence Application Development. 4 Credits. Introduces fundamentals of Oracle Application Express 4.0, Web Application Development and Business Intelligence reporting using the newest ANSI 99 standard’s features for SQL and DML. Covers fundamentals of Web Business Intelligence reporting and Web User Interface development. Recommended: CIS 276 or equivalent database experience. Audit available.

CIS 278. Data Communication Concepts II. 4 Credits. Provides in-depth concepts of data communications, and networking. Explores network architectures, complex network designs and network hardware configuration. Includes a close look at network/telephone company interfaces. 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 and Samba. Prerequisite: CIS 240L or instructor permission. Audit available.

CIS 280D. Cooperative Education: Application Development. 1-4 Credit. Develop career objectives by linking course work with off-campus learning experiences in computer information systems of the public/private sector organizations. Successful completion of 16 CIS course credit hours in CIS declared major with a letter grade of C or better, and instructor permission.

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 284 Audit available.

CIS 286. Computer Forensics. 4 Credits. Introduces computer security administrators 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: CS140U 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 Linux operating system (does not cover publishing web page content). Prerequisites: CIS 240M or CIS 240L and 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 secure 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. Covers preparation for an entry-level systems administrator position utilizing Microsoft server operating systems. Focuses on the knowledge and skills necessary to design, install, configure, and administer a network infrastructure that uses Microsoft Windows Server products. Prerequisites: CIS 240M or instructor permission. Audit available.

CIS 289M. Microsoft Active Directory Administration. 4 Credits. Covers preparation for an entry-level systems administrator position utilizing Microsoft server operating systems. Focuses on the knowledge and skills necessary to design, install, configure, and administer an enterprise network using Microsoft Active Directory, including implementing Group Policies to centrally manage users and computers. Prerequisites: CIS 240M or instructor permission. 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 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.

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 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: 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/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

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 career 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/AS, 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. Recommended: MTH 112 and WR 121. Prerequisites: CS 140U and CS 161. 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.

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, game engine methods, and intelligent behaviors. Recommended: MTH 112 and WR 121. Prerequisites: CS 140U and CS 161. 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.

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, sequences, 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.
Course Descriptions

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.
Examines current issues affecting the role of parents in today's society. Covers the stages of early childhood development, age-appropriate learning expectations, guidance techniques, and parental influence on child development over time. Audit available.

HEC 201. Family Partnerships in Education. 3 Credits.
Introduces the study of family behavior, values, and attitudes. Covers the historical, cultural, and socioeconomic influences on family development, including ecological systems, demographic trends, diversity, contemporary issues and public policy. Audit available.

HEC 212. Parent-Child Relations. 3 Credits.
Introduces the social, developmental, and cultural nature of parenting. Covers parent-child relationships in social contexts, the work of parenting, and issues facing contemporary parents and children. 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/AGS.

HEC 280A. Cooperative Education: Early Education and Family Studies. 1-3 Credit.
Provides an opportunity for hands-on skill development in planned, supervised and regularly evaluated experiences in early education and family studies settings. Experiences and placement sites vary and are developed to meet individual goals. 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 attorney, defendant, victim, judge, jury, police and more. Also examined various criminal court procedures from arrest and arraignment through trial and sentencing. Prerequisite: Placement into WR 121. Audit available.

CJA 113. Introduction to the Criminal Justice System - Corrections. 3 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 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 related 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 in Criminal Justice. 3 Credits.
Explores the conduct and ethics of criminal justice practitioners that give rise to civil liability. Focuses on aspects of risk management to help prevent legal claims. Prerequisites: 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 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: WR 121. Audit available.

CJA 217. Interviewing and Interrogation. 3 Credits.
Presents knowledge and working skills in the art of interviewing and interrogation. Prerequisites: CJA 100, 111; 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. Terrorism. 3 Credits.
Provides information on terrorism, 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 111, 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. Audit available.
CJA 234. National Security and Intelligence. 3 Credits.
Provides a foundation for 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: WR 121. 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 instruments. Emphasizes understanding of probable cause, search warrants 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 250. Human Trafficking. 3 Credits.
Introduces human trafficking and the impact on society through control, manipulation and exploitation of victims for financial gain. Covers special interviewing techniques for victims considering their vulnerabilities. Introduces methods of investigation that help lead to successful prosecution of those involved in compelling victims into prostitution. Prerequisites: WR 121. 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 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 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 correctional 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 113 and WR 121. Audit available.

CJA 265. Community Reentry for Offenders. 3 Credits.
Examines the steps necessary to prepare the offender for release, offender skills assessment and planning, 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 280A. Cooperative Education: Criminal Justice. 1-3 Credits.
Students participate with various public sector criminal justice agencies to learn about their structure and function. The field placement must be program-related. Department permission required prior to registration. Prerequisite: CJA 100 and (CJA 111 or CJA 113).

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. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 job search skills including ADA regulations, identifying accommodations needed for employment, resume writing, developing a portfolio, preparing for interviews, and contacting potential employers. Audit available.

HR 109. Culinary Assistant Training. 15 Credits.
Complete individualized vocational training in food services or clerical areas. Classroom sessions cover job search skills including ADA regulations, identifying accommodations needed for employment, resume writing, developing a portfolio, preparing for interviews, and contacting potential employers. Audit available.

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 186F 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 186Z 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, ensemble work, and functional technique. D 131A and PE 121B 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 170. World Dance. 1 Credit.
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. This course is also offered as PE 124; a student who enrolls in this course a second time under either designator will be subject to the course repeat policy. 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 one may be taken for credit. Recommended: D 175A or PE 186K or equivalent. 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. 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. Note: 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 elementary steps of Fox trot, 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 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 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 the 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 186H 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 120F cannot both be taken for credit. Prerequisites: D 290A or PE 120E. Audit available.

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 vane pumps, gear pumps and piston pumps, to disassemble and assemble hydraulic components, to identify and state the function of ISO hydraulic symbols and to trace the oil flow, and state the operation of various hydraulic systems. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 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 component functions, and to service Caterpillar air conditioning systems. This course prepares the student to confidently work on mobile air conditioning systems in an industrial environment. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 114. Audit available.

DST 116. Fundamentals of Transmissions and Torque Converters. 4 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, and component functions are explained as they relate to the operation of various power train systems. Prerequisite: Provide a dealer letter indicating secured internship at a participating Caterpillar Dealership. DST 112 and DST 114. Audit available.

DST 117. Caterpillar Machine Hydraulic Systems. 4 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 112 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 previously 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 operator 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 marginalization, 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 correlates 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, composite materials 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 121. Oral Health Education and Promotion. 1 Credit.
Advanced laboratory assignments designed to improve proficiency and efficiency in the handling and manipulation of dental materials. Aids in the development of clinical skills in dental office orientations.

DA 140A. Integrated Basic Science I. 2 Credits.
Covers basic principles of oral anatomy plus study of tooth form and function. Introduces dental numbering systems and charting. Prerequisite: Acceptance into 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 dentistry, microbiology and pathology. Prerequisite: Acceptance to the Dental Assisting Program. Prerequisite/concurrent: DA 140A.

DA 142. Integrated Basic Science III. 2 Credits.
Covers specialized 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 9406. 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 clinical 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 classification, 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.
Expansion of the concepts of dental hygiene theory to include the more difficult oral conditions and special needs.

DH 104. Dental Hygiene Practice I. 3 Credits.
Applies dental hygiene theory and techniques in a laboratory setting on dental manikins. Work with patients will begin when specified skill levels are reached.

DH 105. Dental Hygiene Practice II. 3 Credits.

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.
Covers basic theory of dental radiography. Includes intra-oral techniques with emphasis on radiation safety practices and techniques. Corequisite: DH 109L.

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 disease process. Preventive measures and treatment modalities will be discussed.

DH 113. Dental Anatomy. 2 Credits.
Introduces the study of anatomical characteristics of all permanent and deciduous teeth and their surrounding tissues. Prerequisite/concurrent: DH 113L.

DH 113L. Dental Anatomy (Lab). 1 Credit.
Includes laboratory study and application of anatomic characteristics of all permanent and deciduous teeth and their surrounding tissues. Prerequisite/concurrent: DH 113.

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.
Introduces the study of oral diseases and recognition of conditions that may require consultation and treatment by a dentist prior to, or concurrent with dental hygiene procedures. Prerequisites: DH 128, BI 122 or BI 232.

DH 130. Oral Histology Independent Study. 1 Credit.
The continued study of microscopic anatomy, histology and embryology of the oral tissues. Serves as an introduction to the study of oral pathology Prerequisite: BI 122 or BI 232. Prerequisite/concurrent: DH 128.

DH 201. Dental Hygiene Theory IV. 2 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 clients 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. Prerequisite: DH 243. 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.

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.
Covers development, implementation and evaluation of dental health projects in the community. Prerequisites: DH 208 and DH 252.

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. Prerequisite/concurrent: DT 271. 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 284. 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.
Study of dental ceramics (porcelain) including the philosophy, structure, properties, uses, and laboratory procedures associated with this material. Audit available.

DT 275. Dental Laboratory Management. 2 Credits.
Introduces management skills and responsibilities as well as the problems associated with dental laboratory ownership. Prerequisites: Must be accepted and registered in the Dental Laboratory Technology Program or instructor permission. 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 287. Introduction to CAD/CAM Technology and Dental Implant System. 3 Credits.
Introduces CAD/CAM technology, Dental Implant Systems and provides an overview of the oral care delivery system. Includes new emerging technology, products and procedures. Prerequisites: DT 270 and DT 272. Prerequisite/concurrent: DT 206A, DT 206B. Audit available.

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.
Introduction to 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.
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. P/M/Detroit Diesel Electronic Control. 4 Credits.**
Covers Preventive Maintenance Inspection (PMI) of vehicles, Department of Transportation (D.O.T.) out of service criteria, PMI scheduling, lubricants and Winterizing. Covers Detroit Diesel Electronic Control (DDEC) operation and diagnostic procedures. 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. 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 203. 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 9112. Small Marine Diesel Engine Preventive Maint and 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.

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Early Childhood Education Fa

**ECE 120. Introduction to Early Education and Family Studies. 3 Credits.**
Introduces the foundations of early childhood education and family studies. Covers the history, scope, current issues and trends, focusing on programs and services for children, birth-5. Includes an emphasis on development, developmentally appropriate practices and observation of young children and professionals. Requires 2-hours per week of observation/participation. Students must enroll in the Oregon Office of Child Care Central Background Registry (Criminal Background Check). Students must show evidence of current TB test and MMR vaccination. 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, home values and beliefs, ages and stages, 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. Audit available.

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**Course Descriptions**
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 130A. 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 appropriate methods to support guidance and conflict resolution; schedule and routine planning; fundamental curriculum development; and environmental modification. Prerequisites: ECE 133, ECE 122. Corequisite: ECE 130B. Recommended: HEC 262. Audit available.

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.
Explores the role of coaching and mentoring in facilitating the development of novice early education practitioners and in enhancing early childhood environments. Reviews models of coaching and mentoring. Audit available.

ECE 173. Children and Loss: The Effects of Death and Divorce. 1 Credit.
Examines strategies and resources for supporting children and families through difficult periods involving separation or the death of a loved one. Addresses the effects of loss on children and common developmental outcomes. Audit available.

ECE 174. Head Start Past and Present. 1 Credit.
Covers the history, current status, and future of Head Start (including migrant and tribal programs) at the local, regional, and national levels. Audit available.

ECE 175A. Infant/Toddler Caregiving: Learning and Development. 1 Credit.
Covers growth and development of infants and toddlers ages birth - 3, including physical, cognitive, and language development. Audit available.

ECE 175B. Infant/Toddler Caregiving: Group Care. 1 Credit.
Covers group care of infants and toddlers ages birth - 3. Includes 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 of infants and toddlers ages birth - 3, 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 with infants and toddlers ages birth - 3. Includes establishing relationships 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.
Covers working with mixed-age groups in early childhood settings, including children from infancy through elementary school age. Addresses the challenges and benefits of creating quality environments and programming for children of mixed ages. Audit available.

ECE 179. The Power of Portfolios in Early Education. 1 Credit.
Covers the development of portfolios for children in early care and education programs as a way to demonstrate children’s skills. Addresses learning, development, culture, and creating meaningful portfolios with children and families. 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.
Covers the benefits of puppetry and theater for young children, including creative expression, dramatic play, and development across domains. Addresses how to help children work through issues, conflicts and important transitions in their lives through puppetry. Audit available.

ECE 185. Planning Fun and Meaningful Field Trips for Young Children. 1 Credit.
Covers the positive benefits of field trips in early childhood programs, including field trip possibilities in the Portland area, developing field trip protocols, and problem-solving common field trip issues. Audit available.

ECE 186. Nature and Gardening with Young Children. 1 Credit.
Covers the many benefits of gardening and natural experiences for young children, including how to facilitate developmental opportunities across domains in an engaging and ever-changing context. Audit available.

ECE 187. Cooking with Kids. 1 Credit.
Covers creating and sharing cooking experiences with young children to maximize child participation and enhance developmental opportunities in language, literacy, math, science, cooperation and healthy eating habits. Audit available.

ECE 188. Block Play and Woodworking for Young Children. 1 Credit.
Covers the many benefits of block play and wood working experiences for young children, including how to facilitate children’s development across domains in an engaging context. Audit available.

ECE 189. Building Relationships with Infants, Toddlers, and Families. 1 Credit.
Covers ways in which caregivers can facilitate, support, and sustain strong individualized relationships with infants, toddlers, and their families in early education settings. Audit available.

ECE 191. Interest-Based Planning for Infants. 1 Credit.
Covers the ways in which infants communicate their interests to adults. Addresses various methods of assessing infant interests as well as interest-based curriculum development in infant-care programs. Audit available.

ECE 193. Advocacy in the Field of Early Education and Family Studies. 1 Credit.
Covers the role of advocacy in the field of early education and family studies, including issues such as affordability, funding, quality care, compensation, and accessibility. Addresses effective advocacy techniques, including how to plan an advocacy project, and lobbying and legislative processes. Audit available.

ECE 194. Surviving and Thriving: Managing Stress in Early Education. 1 Credit.

ECE 195. Boys in Early Childhood Education. 1 Credit.
Explores the educational and social experiences specific to boys in early childhood programs. Covers teacher’s views on boys’ behaviors and the effect on their learning. Includes developmentally and culturally appropriate approaches to engage boys in the early learning environment and curriculum. Audit available.

ECE 196. Teaming and Communication in ECE Settings. 2 Credits.
Introduces the identification and utilization of different strategies to strengthen teaming and communication specific to early education settings. Covers culture and communication, including communication with colleagues, staff and parents in early education environments. Audit available.

ECE 197. Career Exploration in Early Education and Family Studies. 1 Credit.
Covers the broad-based nature of Early Education and Family Studies. Includes boundaries of the field, career options and requirements, and opportunities for lifelong learning and advancement. Audit available.

ECE 198. Building Effective Outdoor Environments. 1 Credit.
Covers outdoor environments for children of all ages and abilities. Addresses planning, implementing, and evaluating 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 community 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.
Covers early intervention and early childhood special education including disability characteristics, environmental and curricular adaptation, instructional strategies, and legislative mandates. Explores inclusion of children with diverse and special needs in early care and education settings, including the role of families in early intervention services. Recommended: HEC 226 Child Development. 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.
Covers the national Child Development Associate (CDA) credential for professionals in early childhood care and education. Addresses 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 200, ECE 234, ECE 260A. Audit available.

ECE 265. Practicum S. 4 Credits.
Covers advanced level 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 236.

Economics

EC 200. Introduction to Economics. 4 Credits.
Covers six topical 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 survey course. 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/AAT, 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. Enhances the ability to recognize and analyze economic situations 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 policies. 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/AAT, 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 reasons for and the problems of recession, inflation, and stagflation; the use of monetary, fiscal, and economic policies; and other economic management issues. 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/AAT, 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/AAT, 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; 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/AAT, 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 restructure 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

EC 242. Modern China and Its Neighbors. 4 Credits.
Introduces Chinese politics and history emphasizing economic and other policies since 1949. Explores China's relationship with 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.

EC 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 environmental 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/AAT, 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 responses to school situations, students, other personnel and the roles of schools in American Society. Examines ethical, legal, and administrative implications for educators. Recommended as an initial course for those contemplating a career in education. Course is designed to ease the transition of students to college-level study. Audit available.

ED 102. Displays & Graphics for Educators. 3 Credits.
Covers visual communication concepts and techniques and their application to educational and library settings. Covers design principles and strategies to create content and graphics used in 2-D and 3-D visual formats. Includes the development and creation of posters, bulletin boards, presentations, handouts, brochures, educational games, and displays. Prerequisite: CAS 133 or ED 136. Audit available.

ED 111. Library Collection Development. 3 Credits.
Introduces to the selection and evaluation of library materials with a focus on library standards, collection development, 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/concurrent: 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. Emphasizes designing 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 to how to do storytelling. Different storytelling techniques will be demonstrated and practiced in the course. Audit available.

ED 116. Literature for Adolescents and Young Adults. 3 Credits.
Covers contemporary literature being read by young people of high school age. Literature-related audio-visuais, 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. Prerequisite/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.
Presents strategies for teaching, reinforcing, and assessing basic math concepts by moving in a continuum from concrete to abstract. Emphasizes using manipulatives to introduce concepts in addition, subtraction, division, fractions, and place value. Covers the use of visual aids to reinforce and assess math concepts and integration of math concepts into science curriculum. Prerequisites: MTH 60 or higher; placement into WR 121. Audit available.

ED 131. Applied Learning Theory. 3 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 ED 113.

ED 136. Learning with Technology. 3 Credits.
Explores 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 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 schools. 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. Audit available.

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.
Provides an opportunity to 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.
Introduces basic book repair, media storage and preservation, and digitization of materials. Prerequisites: ED 111.

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. Emphasizes 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 baseline, 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 the competencies they have developed during the program. It may also be taken by others in the field of education who wish to create professional portfolios. Prerequisite: WR 115, RD 115 and MTH 60 or equivalent placement test scores. Audit available.

ED 264. Portfolio Development II: AAS Paraeducator Addition. 1 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 teaching techniques, expected achievement levels, intellectual functioning, goals and objectives for working with students with developmental disabilities. Emphasizes physical and mental development from birth and familiarity with the known causes, classifications and terminology used in the field of special education. Audit available.

ED 269. Introduction to Teaching the Learning Disabled Student. 3 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. Prerequisites: 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. Independent Projects in Education. 1 Credit.
Provides an opportunity to work independently on an individualized area of study within education under the sponsorship and guidance of an education faculty member. Prerequisite: Instructor permission. Audit available.

ED 298B. Independent Projects in Education. 2 Credits.
Provides an opportunity to work independently on an individualized area of study within education under the sponsorship and guidance of an education faculty member. Prerequisite: Instructor permission. Audit available.

ED 298C. Independent Projects in Education. 3 Credits.
Provides an opportunity to work independently on an individualized area of study within education under the sponsorship and guidance of an education faculty member. Prerequisite: Instructor permission. Audit available.

ED 298D. Independent Projects in Education. 4 Credits.
Provides an opportunity to work independently on an individualized area of study within education under the sponsorship and guidance of an education faculty member. Prerequisite: Instructor permission. Audit available.

ED 298E. Independent Projects in Education. 5 Credits.
Provides an opportunity to work independently on an individualized area of study within education under the sponsorship and guidance of an education faculty member. Prerequisite: Instructor permission. 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 29 CFR 1910 (OSHA General Safety and Health Provisions, Competent Person, Qualified Person, Health Hazards in Construction, Electrical, Fall Protection, Stairways and Ladders, Scaffolding, Motor Vehicles, Hand & Power Tools, and Excavations. Awards a 10-hour Construction Outreach Completion Card from OSHA. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Audit available.

ELT 125. Basic Programmable Controllers. 2 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.
Present 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 cable, 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 Ready Access: includes the use of special splicing techniques, enclosures, test sets and fault locating equipment. Placing, splicing, termination and testing of fiber optic cables in campus applications is included. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. Prerequisites: ELT 151 or TE 9102 Audit available.

ELT 153. Fiber Optics: Outside Plant. 4 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 analyze electric motor control malfunctions. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 201 and APR 201 cannot both be taken for credit. Prerequisites: FMT 111 or APR 104 or Department Permission. Audit available.

ELT 204. Adjustable Speed Drives. 2 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 ESOL 252) and (RD 80 or ESOL 250) or equivalent placement test scores. Audit available.

ELT 210. Electricity for the Non-Electrician II. 2 Credits.
Provides practical, hands-on application of residential wiring methods. This class is a direct continuation of the skills developed in Electricity for the Non-Electrician, incorporating additional wiring practices, materials and troubleshooting methods. Emphasizing safety and workmanship as well as electrical theory and building codes as they apply to the homeowner. Prerequisites: ELT 110 or TE 9071. Audit available.

ELT 220. OSHA 30 Hour 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.
Prepares electricians for state examination as prescribed by Oregon State Building Codes Division. Includes code explanations and application. This class can be used towards Continuing Education Units for Oregon State electrical licensing purposes. ELT 231 and APR 231 cannot both be taken for credit. Audit available.

ELT 250. AMP ACT I. 1 Credit.
Includes an overview of premises cabling systems, and in-depth review of the ANSI/TIA/EIA and ISO/IEC industry standards, and a discussion and hands-on practicum on the rough-in, installation, management, and termination of shielded and unshielded twisted pair and optical fiber cabling systems. The course is about 85% hands-on and is designed with a systems approach instruction method. Successful completion of the course examination will certify you as an AMP Registered Installer. Audit available.

ELT 251. AMP ACT II. 1 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-526-14A and ANSI/TIA/EIA-526-7. Each student will also obtain experience troubleshooting common problems with installed LAN cable plants. This course is approximately 75% hands-on training. An extensive documentation package is provided. Successful completion of the course examination will certify you as an AMP Registered Certifier and Troubleshooter. Prerequisites: ELT 250 or TE 9201. 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.

Electronic Engineering Tech

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 Law, Kirchhoff’s Laws; DC resistive networks. Thevenin and Norton equivalent circuits, node voltage and mesh current analysis methods; Includes a 3-hour per week laboratory session. Prerequisite/concurrent: MTH 111. Prerequisite/concurrent: EET 101 or department approval. Audit available.

EET 112. Electrical Circuit Analysis II. 5 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 112. 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 1. 4 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, and EET 111. Audit available.

EET 122. Digital Systems 2: Computing Systems. 5 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 3: Mixed-Signal Systems. 5 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 111 and EET 122. Audit available.

EET 178. Computing Environments for Technicians. 5 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, methods to protect the 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.
Transistor and diode AC models and equivalent circuits. Design and analysis of multistage amplifiers and RF communications systems. Frequency response and Bode plots. A 3-hour per week laboratory includes measuring and analyzing the performance of transistor circuits in RF communications systems. Prerequisite: EET 221 Audit available.

EET 241. Programming for Electronics. 4 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 EET 178. 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: EET 123 and EET 178. Audit available.

EET 254. Electronic Engineering Technology Seminar. 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 256. Capstone Project. 2 Credits.
Introduces students to their role as team members 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, arrhythmia and ambulatory monitoring instruments, fetal monitoring instruments, biomedical 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 239). 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, anesthesia 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. Covers basic hydraulics and pneumatics, wind power production as well as other wind power related topics. Prerequisite/concurrent: MTH 111. Audit available.

EET 272. Motors and Motor Controls. 3 Credits.
Covers operating principles, characteristics, and control of AC and DC motors and generators. Explores single-phase, split-phase, and three phase AC motors, Series and Shunt DC motors, and stepper motors. Implements basic motor control circuits using discrete and programmable control components. Prerequisites: 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, 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.
Provides an approved cooperative education position within a local electronic industry or related employer. Explores the connection between one’s educational program and industry application. Department permission required.

EET 280C. Cooperative Education: BMET Practicum. 4-11 Credit.
Provides clinical education experience in a biomedical department with a hospital, clinic or other medical facility, a medical equipment repair/manufacturer company, or a laboratory. Variable credit: 30 hours of work experience equals one credit. Prerequisites: Department approval; EET 260 Corequisite: EET 261.

Emergency Dispatch Services

ETC 103. Introduction to Emergency Telecommunications. 4 Credits.
Introduces the concept of telecommunications 911 dispatching, including roles, responsibilities and basic job duties. Audit available.

ETC 104. Emergency Telecommunications - Call Taking. 4 Credits.
Utilizes the NAOC course to prepare for qualification of the nationally recognized National Academies of Emergency Dispatch, Basic Telecommunicator Certificate. Prerequisite: ETC 103. Audit available.

ETC 105. Crisis Intervention & Critical Incident Stress Management. 3 Credits.
Explores the unique stressors experienced by emergency services responders. Examines the Critical Incident Stress Management model and provides an opportunity for a mock debriefing session. Audit available.

ETC 106. Introduction to Law for Tele-Communicators. 3 Credits.
Introduces legal concepts and theory as they apply to emergency telecommunications and public safety. Audit available.

ETC 108. Introduction to Computer Aided Dispatching. 2 Credits.
Develops keyboarding skills using Computer Aided Dispatching based upon information received through various media, but most often aurally. Includes a variety of audio recordings, dictation and role-play to record emergency response information in a computer program and with a variety of software applications, including Word, Excel, CriticalCall and Computer-Aided Dispatch. Required keyboarding speed of at least 25 wpm. Audit available.

ETC 110. Communication Center Operations - Basic Skills. 3 Credits.
Introduces the emergency communications simulator lab. Applies methods and theory in an interactive lab setting using radio, telephone, computers and recording equipment. Includes the use of emergency communications equipment and standard operating procedures to simulate actual emergency calls and situations. Audit available.

ETC 111. Communication Center Operations - Intermediate Skills. 3 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.

ETC 112. Communication Center Operations- Advanced Skills. 3 Credits.
Covers emergency call-taking and emergency services radio communication in the 9-1-1 simulation lab. Requires demonstrating a high level of multi-tasking ability, quick responses and rapid problem-solving skills, as well as a familiarity with 911 computer software and multifunction telephone systems. This is the third course in a three-course sequence. Prerequisite: ETC 111. Department Permission. Audit available.

ETC 113. Communications Center Operations: Service Dispatcher. 3 Credits.
Continues practical experience for industry related multitasking. Introduces advanced problem-solving and improves customer service involving diverse populations. Includes the use of multi-line phones and radios and the application of policies, procedures and protocols in the handling of specific customer service situations. Prerequisite: ETC 111. Audit available.
ETC 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 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 202. Emergency Medical Dispatch Overview. 2 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. Prerequisites: WR 121 and EM 110 or EM 112 or EM 114. Audit available.

EM 101. Introduction to Emergency Services. 4 Credits.
Covers a broad range of emergency services providers and the relationships between these service providers and the community. Includes history, organizational structure, terminology, training and standards, legal and ethical responsibilities of Police, Fire, Emergency Medical, 9-1-1 and Emergency Management, as well as joint responses. Audit available.

EM 103. Information Systems of Emergency Management. 3 Credits.
Introduces communications technologies used in emergency response and disaster response, including telephone, radio and computer systems. Covers the operation and components of two-way radio and broadcasting procedure. Explains how link communications specialists provide between agencies, responders and the public. Examines current standards and practices utilizing social media, GIS and GPS, mapping technology, video monitoring and other technologies and security systems. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

EM 110. Theory of Emergency Management. 3 Credits.
Introduces emergency management theory, including basic definitions, identification of hazards, descriptions of the phases of emergency management, identification of resources, roles and responsibilities of emergency managers, and coordination of various systems. Prerequisite: WR 115. Audit available.

EM 112. Theory of Homeland Security. 3 Credits.
Introduces Homeland Security theory including: basic definitions, identification of threats and organizations, identification of resources, roles and responsibilities of emergency managers, first responders, law enforcement and the military, the coordination of various systems and levels of government. Department permission required. Audit available.

EM 114. History of U.S. Hazards, Disasters and Emergency Management. 4 Credits.
Surveys the U.S. History of hazards and disasters and traces the evolution of emergency management. Emphasis will be on naturally occurring disasters with appropriate attention to the development of technological incidents and the evolution of terrorism. Recommend: WR 115. Audit available.

EM 201. Disaster Planning & Preparedness. 4 Credits.
Introduces disaster preparedness for individuals, businesses, communities and governments. Explores the design and preparation of disaster preparedness plans for individuals and local jurisdictions. Examines the relationships 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.
Examines the creation of risk 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.
Examines the creation of a portfolio, documenting course work, activities, education and experience history. Includes the completion of a comprehensive personal history background. Provides discipline specific oral interview questions. Audit available. Department permission required.

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. Prerequisites: 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.
Examines the unique stressors experienced by emergency services responders. Examines the Critical Incident Stress Management model and provides an opportunity for a mock debriefing session. Examines individual response to stress and the role that personality traits play in high stress situations. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

EM 221. Business Continuity or Resumption of Operations Planning. 3 Credits.
Address the critical dependence of modern organizations on disaster vulnerable technology, such as management information, communications, and computerized process control systems. Students will have the opportunity to produce working plans that provide preventative measures to minimize disaster impact, provide an organized response, and ensure business continuity during recovery. Prerequisites: EM 114 & WR 121. Audit available.

EM 222. Disaster Exercise Design and Evaluation. 3 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.
Examines 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 course work, 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.

EM 280A. CE: Emergency Management. 1 Credit.
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.

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 experience and internship 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 the profession. Prerequisite: WR 121. Recommended: EMS 106 and SP 111 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. Recommended: EMS 106 and (SP 111 or COMM 111). Prerequisites: EMS 100, EMS 105, WR 121.

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 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 135. Advanced EMT Part 1. 5 Credits.
Develops skills for recognizing symptoms of illness and injuries. Covers proper procedures of emergency care at the Advanced EMT level. Requires passing criminal background check and drug screen before placement into mandatory clinical and internship experience. Part 1 of the 2-part Advanced EMT course. Department permission required. Recommended: BI 121, BI 122, or higher, WR 121, and MTH 60. Prerequisite: EMS 106, WR 115, MTH 20, RD 90 (or higher levels); current HCP CPR card; current Oregon EMT licensure.

EMS 136. Advanced EMT Part 2. 5 Credits.
Develops skills for recognizing symptoms of illness and injuries. Covers proper procedures of emergency care at the Advanced EMT level. Continuation of AEMT Part I. Requires passing criminal background check and drug screen before placement into mandatory clinical and internship experience. Part 2 of the 2-part Advanced EMT course sequence. Department permission required. Recommended: BI 121, BI 122, or higher, WR 121, and MTH 60. Prerequisite: EMS 135 at PCC within the last year and Current HCP CPR card; Current Oregon EMT licensure.

EMS 240. Paramedic I. 12 Credits.
Covers illness and injury prevention, medical legal issues and well-being of the paramedic. Includes patient care topics such as advanced airway, medication math, general principles of pathophysiology of shock, pharmacology, endocrinology, cardiovascular system, and EKG monitoring. Requires associated practical labs. Prerequisites: WR 121; MTH 65, BI 233, EMS 100, EMS 113, EMS 114, EMS 115, EMS 116, MP 111 and Department permission required.

EMS 242. Paramedic II. 9 Credits.
Covers EKG review, trauma assessment, kinematics, toxicology, drug and alcohol abuse, infectious disease, OB/GYN, neonatology, pediatric, geriatric, acute abdomen, burns, psych disorders, dealing with death and the dying, crime scene preservation, environmental conditions, and advanced airway. Includes Pre-Hospital Trauma Life Support (PHTLS), Pediatric Education for Pre-hospital Professional (PEPP) and Advance Cardiac Life Support (ACLS) certifications. Requires associated practical labs. Prerequisites: EMS 240 and Department permission required.

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 situations. 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.
Begins field experience designed to expose students to disease and injury conditions. This segment begins the required 200 hours and number of calls necessary to fulfill the State curriculum. Department permission required. Prerequisite: EMS 244.

EMS 250. Paramedic Field Internship II. 7 Credits.
Complete the field experience necessary to fulfill the required hours and calls necessary for state certification. Department permission required. Prerequisite: EMS 248.

EMS 252. Paramedic III. 2 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.

Engineering
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 approved or ENGR 101. Audit available.

ENGR 105. 3-D Modeling and Engineering Graphics. 3 Credits.
Introduces manual and computer-aided drafting used to design parts and assemblies. Covers sketching, basic drawing and dimensioning, geometric construction, and multiple views. Focuses on 3-D modeling techniques. ENGR 105, CADD 175 and CMET 237 cover similar material and cannot all be applied to graduation requirements. Prerequisite: ENGR 101 or (placement into MTH 111 and department approval). Prerequisite/concurrent: WR 115 or higher. 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. Prerequisite/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. Introduces compositions and analysis of forces acting on particles and rigid bodies. Force systems, centroids, and moments of inertia are covered. Includes creation of 2-D drawings and 3-D solid models with AutoCAD. Prerequisite: Department approved or ENGR 101. Audit available.

ENGR 212. Dynamics. 4 Credits.
Introduces control of mechanical systems 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.

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ENGR 212. Dynamics. 4 Credits.
Introduces control of mechanical systems 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 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 response are also covered. Circuit simulation, math analysis software, and laboratory experiments are incorporated to solidify classroom theory and practice. Prerequisite: ENGR 101; MTH 252. Audit available.

ENGR 222. Electrical Circuits. 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 Laplace Transform analysis. The transfer function, convolution, bode plots, and Fourier series are used to analyze circuits. Passive and active filters are designed and analyzed using these new circuit analysis techniques. Circuit simulation, math analysis software, and laboratory experiments are incorporated to solidify classroom theory and practice. Prerequisite: ENGR 222 Prerequisite or concurrent enrollment: MTH 256. 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 thermal 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 size, 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. 4 Credits.
Explores shift register devices and circuits; design, timing analysis, and application of synchronous state machine circuits using discrete devices and programmable logic devices. Includes timing analysis of asynchronous state machines, arithmetic circuits and devices; internal architecture of a microprocessor; design and interfacing of memory systems. Introduces design for test techniques. Reinforces the systematic design methodology, documentation standards, and use of computer-based tools. Prerequisite: ENGR 171. Audit available.

ENGR 275. Microprocessor Systems. 4 Credits.
Introduces X86 microprocessor architecture and assembly language programming for the IBM PC compatible computer, including the use of BIOS and DOS functions calls and the use of procedures. Structured programming techniques will be used to write programs that accept keyboard input and create displayed results. Appropriate program testing and debugging methods will be emphasized. Includes a 3-hour per week laboratory. Prerequisite or concurrent: ENGR 171. Audit available.

ENGR 280A. Cooperative Education: Engineering. 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.
Examines significant works of fiction, short stories and novels, from diverse cultures and periods in history; explores fiction as an art form designed to provoke thought and challenge social norms; considers fiction as an expression 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/AAS, Arts and Letters/AGS, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AGS, Arts and Letters/AAOT, Arts and Letters/ASOT-B.

ENG 105. Introduction to Literature (Drama). 4 Credits.
Examines plays as literature and as an art form designed to provoke thought and to challenge social norms; considers drama as an expression 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/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 106. Introduction to Literature (Poetry). 4 Credits.
Examines significant poems from diverse cultures and periods in history; explores poetry as an art form designed to provoke thought and challenge social norms; considers poetry as an expression 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/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, 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/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, 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/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, 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 from both 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/AAS, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, 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 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/AAS, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAAS, 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 its Anglo-Saxon and Celtic beginnings through the 18th century. The series need not be taken in sequence. Recommended: ENG 104, 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 Narayan, Ved Mehta and Anushati 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 students to Chinese literature translated into English, from the oldest texts (ca. 1000 BCE) to contemporary works. Includes poetry, fiction, nonfiction, drama, and film. Examines the cultural and historical importance of Confucianism, Daoism, and Buddhism on Chinese literature. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. 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, gender, 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. Biography and Autobiography. 4 Credits.
Covers the study of biographies, autobiographies, 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 the Northwest. 4 Credits.
Studies fictional, factual, and poetic works by Northwest writers from before the arrival of Euro-Americans to the present. Emphasizes relationships 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 215. 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 and groups for generations, 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 216. 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 differences between literature for children and teens and literature for adults, the relationship between text and illustrations, and other issues and controversies concerning children's literature such as the didactic use of text and censorship. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available.

ENG 220. Literature of Comics and Graphic Novels. 4 Credits.
Explores comics and graphic novels. Examines the complex relationship between images and the written word, and the written word combined in narrative forms. Considers cultural, political, and/or artistic elements of a variety of examples of the form. 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 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 femalelessness 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.
Introduces texts that explore the relationship 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 literature, and a sense of place. Prerequisites: WR 115, RD 115 and 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. 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/AAS, 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/AAS, 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 international and cultural moments of transition or crisis. Explores the relationships between a text, its author, and its national, cultural and/or linguistic boundaries. 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 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 myth, past and present. Introduces various ways of interpreting and experiencing myth and folklore as texts with oral origins. Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. 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 256. 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, canonized (such as novel, narrative poem), popular (such as the serialized tale, verse) and unpublished (the jeremiad, Native American oratory, the slave narrative, diary). Prerequisite: WR 115 and RD 115 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Arts and Letters/AOBT, Arts and Letters/AAOT, Arts and Letters/AAS, 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/AOBT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

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/AOBT, Arts and Letters/AAOT, Arts and Letters/AAS, 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/AOBT, Arts and Letters/AAOT, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

ENG 298. Independent Study: English. 3 Credits.
Covers one 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/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.
ESOL 40. Level 4 Reading. 4 Credits.
Provides 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 higher in all three skill levels or receive instructor permission.

ESOL 41N. Level 4 Reading. 0 Credits.
Provides reading as a process that involves determination of purpose, selection and adjustment of strategies, analysis and reflection of underlying meanings, and integration of prior knowledge with new knowledge to address the purpose. Covers content comprehension, textual analysis, critical thinking skills, study skills, and language analysis at the low-intermediate level. Includes using the dictionary, finding main ideas, inferring, using context clues, and reviewing prereading techniques. Reviews word forms, common affixes, synonyms, and antonyms. Presents readings from textbooks and literature in the context of communicating in academic and adult life roles. Prerequisites: ESOL placement test AND concurrent placement in ESOL 42 and ESOL 44 or higher, OR ESOL 30.

ESOL 42. Level 4 Writing. 4 Credits.
The fourth level of ESOL and the first of five-course sequence that focuses on writing. Includes an 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 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. Prerequisite: 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.
Provides oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior new knowledge to address the communicative purpose. Develops listening comprehension and speaking skills at a low intermediate level. Addresses use of important language functions, such as asking for clarification, agreeing, and negotiating meaning. Includes one prepared speech. Introduces the English stress system, intonation, and certain consonant and vowel sounds. Places communication in the context of adult life roles. Prerequisites: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 40 and ESOL 42 or higher. Audit available.

ESOL 44N. Level 4 Communication. 0 Credits.
Provides oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior new knowledge to address the communicative purpose. Develops listening comprehension and speaking skills at a low intermediate level. Addresses use of important language functions, such as asking for clarification, agreeing, and negotiating meaning. Includes one prepared speech. Introduces the English stress system, intonation, and certain consonant and vowel sounds. Places communication in the context of adult life roles. Prerequisites: ESOL placement test OR successful completion of ESOL 30; AND concurrent placement in ESOL 40 and ESOL 42 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 higher 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 higher 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 higher 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 third term CTE courses. Runs 80 hours per term concurrently with the CTE courses. Prerequisite: Placement into ESOL Level 5 or higher 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. 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.
Provides English 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 in ESOL 150/150N and ESOL 152/152N 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 150N. Level 5 Reading. 0 Credits.
Provides reading as a process that involves determination of purpose, selection and adjustment of strategies, analysis and reflection of underlying meanings, and integration of prior knowledge with new knowledge to address the purpose. Covers content comprehension, textual analysis, critical thinking skills, study skills, and language analysis at the intermediate level. Includes using the dictionary, finding main ideas, summarizing, inferring, using context clues and reviewing prereading techniques. Reviews word forms, common affixes, synonyms, and antonyms. Presents readings from textbooks and literature in the context of communicating in academic and adult life roles. Prerequisite: ESOL placement test OR successful completion of ESOL 40 or ESOL 40N; AND concurrent placement in (ESOL 42 and ESOL 44) or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 152. Level 5 Writing. 4 Credits.
The fifth level of ESOL and the second of a 5-course sequence that focuses on writing. Review of the writing process and introduction to the essay. Descriptive, 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 5-course sequence that focuses on writing. Review of the writing process and introduction to the essay. Descriptive, 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 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.
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 communicative purpose. Develops listening comprehension and speaking skills at an intermediate level. Addresses use of important language functions, such as asking for clarification, agreeing, and negotiating meaning. Includes a minimum of one prepared speech. Reviews English consonants and vowels, consonant clusters, past tense and plural endings, common sound substitutions; intonation, phrasing, reductions and stress patterns. Places communication in the context of academic and adult life roles. Prerequisite: ESOL placement test OR 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.
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 communicative purpose. Develops listening comprehension and speaking skills at an intermediate level. Addresses use of important language functions, such as asking for clarification, agreeing, and negotiating meaning. Includes a minimum of one prepared speech. Reviews English consonants and vowels, consonant clusters, past tense and plural endings, common sound substitutions; intonation, phrasing, reductions and stress patterns. Places communication in the context of academic and adult life roles. Prerequisite: ESOL placement test OR 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 157. Level 5 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. Includes the identification and production of English consonants and vowels, and English reduction processes, common sound substitutions, stress and intonation at the intermediate level. Recommended for students who struggle to produce understandable intermediate level English. Prerequisites: Placement in ESOL 40/40N and 42/42N and 44/44N or higher; or successful completion of ESOL 30. Audit available.

ESOL 157N. Level 5 Pronunciation. 0 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. Includes the identification and production of English consonants and vowels, and English reduction processes, common sound substitutions, stress and intonation at the intermediate level. Recommended for students who struggle to produce understandable intermediate level English. Prerequisites: Placement in ESOL 40/40N and 42/42N and 44/44N or higher; or successful completion of ESOL 30. Does not replace courses in the core curriculum.

ESOL 160. Level 6 Academic Reading. 5 Credits.
Presents reading as a process that involves determination of purpose, selection and adjustment of strategies, analysis and reflection of underlying meanings, and integration of prior knowledge with new knowledge to address the purpose. Covers content comprehension, textual analysis, critical thinking skills, study skills, and language analysis at the high intermediate level. Includes reading various texts for a variety of purposes. Reviews pre-reading techniques and includes finding themes and main ideas, summarizing, paraphrasing, inferencing, and using context clues, word forms and common affixes. Prerequisites: ESOL placement test OR successful completion of ESOL 150/150N; AND concurrent placement in ESOL 152/152N 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 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 necessary foundations for identification and practice of the following grammatical structures: subject-verb agreement, verb tenses, passive voice, gerunds and infinitives, and articles. Reinforces concepts in both oral and written contexts. This elective class does not replace courses in the core curriculum. Prerequisites: Placement in ESOL 162, and ESOL 164 or higher; or successful completion of ESOL 150 and 152, and ESOL 154 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. Reviews English consonants and vowels, word endings, intonation, phrasing, linking, reductions and stress patterns. Prerequisites: ESOL placement test OR successful completion of ESOL 154/154N; AND concurrent placement in ESOL 152/152N and ESOL 164 or higher. Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS.

ESOL 230. Advanced English Skills Review. 2 Credits.
Reviews advanced academic listening, reading, writing, and speaking skills. Develops strategies for taking time-sensitive tests, such as 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.
Presents reading as a process that involves determination of purpose, selection and adjustment of strategies, analysis and reflection of underlying meanings, and integration of prior knowledge with new knowledge to address the purpose. Covers content comprehension, textual analysis, critical thinking skills, study skills, and language analysis at the advanced level. Includes reading diverse texts for a variety of purposes. Reviews pre-reading techniques and includes finding themes and main ideas, analyzing figurative language, summarizing, paraphrasing, inferencing, and using context clues, word forms and common affixes. Prerequisites: ESOL placement test OR successful completion of ESOL 160; AND concurrent placement in ESOL 162/162N and ESOL 164 or higher. 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.

ESOL 251. Advanced Supplementary Writing. 3 Credits.
Emphasizes the refinement and development of conscious control of English sentence and paragraph structures, outlining and use of outside sources. Reviews pre-reading techniques and includes finding themes and main ideas, analyzing figurative language, summarizing, paraphrasing, inferencing, and using context clues, word forms and common affixes. Prerequisites: 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/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

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/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

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. Covers listening comprehension, note-taking, and discussion of academic topics at the advanced 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: ESOL placement test OR successful completion of ESOL 164; AND concurrent placement in ESOL 160 and ESOL 162 or higher. 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.
ESOL 260. Level 8 Academic Reading. 5 Credits.

Provides oral communication as a process that involves determination of purpose, selection and adjustment of strategies, comprehension checks, and integration of prior knowledge to address the purpose. Covers listening, 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: ESOL placement test OR successful completion of ESOL 254; AND concurrent placement in or completion of (ESOL 252 and ESOL 254) or placement into (ESOL 262 and ESOL 264). 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.

ESOL 262. Level 8 Academic Writing. 5 Credits.

Introduces theory, principles and practices of sustainability and their applications. Includes discussions on maintaining ecological and environmental integrity, human health and well-being, and economic viability. May include off-site field trips, physical activity, and hands-on learning opportunities. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

ESR 171. Environmental Science: Biological Perspectives. 4 Credits.

Covers 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 and may include fieldwork. 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/AATOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

ESR 172. Environmental Science: Chemical Perspectives. 4 Credits.

Covers 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 and may include fieldwork. 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/AATOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

ESR 173. Environmental Science: Geological Perspectives. 4 Credits.

Covers environmental topics that are primarily geological in nature. Includes geology basics, soil resources, hydrogeology, nonrenewable mineral and energy resources, perpetual energy resources, and solid waste. The associated laboratories will illustrate these topics and may include fieldwork. 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/AATOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

ESR 200. Introduction to Environmental Systems. 4 Credits.

Introduces the structure and function of terrestrial, aquatic and atmospheric systems and the connections among them. Introduces scientific and laboratory techniques. Emphasizes scientific report writing to communicate research findings. Includes examination of the genesis of these laws (e.g. NEPAA, Clean Air and Water Acts, RCRA, Endangered Species Act) and their history of compliance and violation. Prerequisite: ESR 160. Audit available.

ESR 202. Applied Environmental Studies: Prep for Problem Solving. 4 Credits.

Provides experience collecting environmental data through fieldwork and laboratory analysis. Explores quantitative analysis of data using a variety of techniques. Emphasizes scientific report writing to communicate research findings. Prerequisite: ESR 160, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and ESR 160 or BI 143. Audit available.

ESR 298. Independent Study: Environmental Science. 1-4 Credits.

Provides an opportunity to perform research on a selected topic related to environmental science or environmental studies under the supervision of an instructor. Prerequisite: Instructor approval, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

Facilities Maintenance Tech

FMT 100. Introduction to Facilities Maintenance Systems. 2 Credits.

Overview of industrial maintenance. OSHA approved industrial safety procedures are presented. 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 1131 both cannot be taken for credit. Prerequisite: 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. 
Cover and analyze the operation of refrigeration system components. Includes compressors, condensers, evaporators, refrigerants and metering devices. Lab includes system components and compressor testing methods, focusing on charging, evacuation and recovery methods. FMT 102 and APR 132 cannot both be taken for credit. Prerequisites: FMT 101 or APR 131 or TE 9242. 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 260) and (RD 80 or ESOL 260) 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. 2 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 maintenance and commercial locks and related hardware. Includes basic operation and operating principles of cylinders, types of locking mechanisms, desk type locks, and master key systems. Audit available.

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 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/R 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 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 222. Intermediate Boilers. 3 Credits. 
Fundamentals of hydronics systems related to electrical controls and fluid flow. Includes burner control system, schematic diagrams, distribution systems, heat emitters, radiant floor heating, expansion tanks, entrained air, and auxiliary heat loads. Prerequisites: FMT 122 or TE 9161. 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. 2 Credits. 
Introduces Emergency Services. Explores career opportunities and requirements for emergency service responders. Introduces 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. Prerequisites: WR 90 and MTH 20. Audit available.

FP 111. Fire Academy Part 1. 10 Credits. 
Covers basic tools, procedures, techniques and safety precautions utilized by firefighters, during fire ground operations. Includes comprehensive training in individual firefighting skills. Involves transfer of knowledge obtained from classroom instruction to drill ground application, during hands-on training. Prerequisite: WR 90 and MTH 20. Corequisite: FP 112.

FP 112. Fire Academy Part 2. 7 Credits. 
Covers tools, procedures, techniques and safety precautions utilized by firefighters, during fire ground operations. Includes comprehensive training in firefighting skills related to fire company evolutions. Involves transfer of knowledge obtained from classroom instruction to drill ground application, during hands-on live fire training. Corequisite: FP 111.

FP 121. Fire Behavior and Combustion. 3 Credits. 
Explores the theories and fundamentals of how and why fires start, spread, and how they are controlled. Covers the process of combustion, fire dynamics in a compartment, dynamics of extreme fire behavior and reading smoke. Prerequisites: WR 115 and MTH 60.

FP 122. Fundamentals of Fire Prevention. 3 Credits. 
Provides fundamental knowledge relating to the field of fire prevention. Includes 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 115 and MTH 60.

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, WR 115 and FP 112 or equivalent.

FP 133. Wildland Firefighter. 3 Credits.
Covers the basic skills required for wildland fire fighting. Includes wildland fire behavior, fire control tactics, human factors on the fireline, standards for fire fighter safety and survival, and an introduction to the incident command system. Prerequisites: WR 90, RD 80 and MTH 20.

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: MTH 60 and WR 115.

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 during 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 level I technical rescuer knowledge and skills as identified 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.
Covers fire service based pre-hospital 611-1 emergency medical systems based on NFPA 1710, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, Chapters 4 and 5. Prerequisites: WR 121, MTH 65, EMS 106, FP 112.

FP 210. Multi-Cultural 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. Prerequisite: WR 121 and MTH 65.

FP 212. Fire Investigation (Cause Determination). 3 Credits.
Explores the burning characteristics of combustibles and how materials are ignited. Covers interpreting clues and burn patterns leading to the point of origin and identifying 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. Includes risk evaluation and control procedures for fire stations, training sites, emergency vehicles, emergency situations involving fire, EMS, hazardous materials, and technical rescue. Prerequisite: WR 121 and MTH 65.

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, FP 123, WR 121 and MTH 65.

FP 243. Laws Affecting Fire Fighting. 1 Credit.
Covers various federal, state and local statutes, codes and ordinances that have a bearing on firefighters. Personal and organizational responsibilities will be covered. Equal employment opportunity, operation of emergency vehicles and fire codes are included.

FP 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 NFPA 1021, 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 & II, 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 Protection. 3 Credits.
Offers field placement in a fire department to link course work to actual working experiences. Emphasizes independent learning and workplace skills with limited instruction. Must be coordinated with the hosting fire department supervisor, PCC Fire Protection instructor, and PCC cooperative education specialist. Attendance at mandatory seminar and Fire Protection Department permission required. Prerequisites: WR 115, RD 115 and MTH 60 or equivalent placement test scores, and FP 112, FP 123, and EMS 106.

FP 280B. Cooperative Education. 3 Credits.
Offers hands on training experience in a fire service related work environment and equipment lab linking academic work to actual fire related drill experiences. Emphasizes workplace skills, teamwork and student leadership.

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.
Fitness Technology

FT 101. Fitness Technology Seminar. 3 Credits.
Explores careers in the fitness and health industry. Covers concepts, skills, and methodology required to become a successful instructor of movement. Provides opportunities for practical experience and insight into the role of a fitness/health professional in fitness and health clubs and community based wellness centers, including self-promotion, and psychomotor movement instruction. Prerequisite: Acceptance to the Fitness Technology Program or instructor approval, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FT 102. Injury Prevention & Management. 3 Credits.
Covers prevention and rehabilitation of athletics/sports/fitness injuries. Emphasizes preventing injuries by reducing risks for injury or illness, creating safe environments, ensuring proper fit, using equipment properly, and implementing emergency action plans. Students who satisfactorily complete the requirements will be eligible for first responder certifications (i.e. CPR, first aid, etc.). Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FT 103. Nutrition for Fitness Instructors. 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, MTH 65, and WR 121. Audit available.

FT 104. Fitness Assessment. 3 Credits.
Introduces fitness testing for apparently healthy populations. Covers cardiovascular fitness, muscular strength and endurance, flexibility, and body composition in both individual and group assessments. Prerequisites: MTH 65, WR 121, FT 131, and (HE 295 and PE 295) or (HPE 295). Audit available.

FT 105. Exercise Prescription. 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, MTH 65, and WR 121. Audit available.

FT 106. Analysis of Movement. 3 Credits.
Introduces personal exercise program development and progression for cardiorespiratory, muscular strength/endurance, flexibility/balance, body composition and fitness/sport performance. Prerequisites: FT 104. Audit available.

FT 107. Exercise Physiology. 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, MTH 65, and WR 121. Audit available.

FT 131. Structure & Function of the Human Body. 4 Credits.
Introduces basic principles in anatomy, physiology, and exercise science. Introduces terminology, concepts, basic chemistry, cell structure and function, tissues, metabolism and the cardiovascular, pulmonary, skeletal, muscular, endocrine, and nervous systems. Prerequisite: Acceptance to the Fitness Technology program or instructor permission and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/concurrent: PE 181A or PE 181B or PE 181C. Audit available.

FT 180. Fitness Technology Internship Preparation. 1 Credit.
Develops essential skills for internship site placement. Focuses on company research, interview techniques, and resume and cover letter generation. Prerequisite: FT 131. Audit available.

FT 201. Advanced Fitness Assessment and Prescription. 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, (HE 295 and PE 295) or (HPE 295), or instructor approval. Audit available.

FT 202. Fitness and Aging. 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, MTH 65, and WR 121. Audit available.

FT 203. Fitness Promotion. 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, MTH 65, and WR 121. Audit available.

FT 204. Advanced Exercise Physiology. 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 104 and FT 107. Audit available.

FT 280. Fitness Technology Internship. 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.

Foods and Nutrition

FN 110. Personal Nutrition. 3 Credits.
Examines 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.
Examines 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.
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: Acceptance to the Fitness Technology program or instructor permission and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

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 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.
Examines 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, Arts and Letters/ASOT-B.

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 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 251. 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 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 102 in an accelerated format. Stresses the development of listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on the student's active use of the language. Recommended to the highly motivated student. Proficiency target level: Intermediate high; the successful student will be able to handle 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 103 and FR 201 in an accelerated format. Stresses the development of listening, speaking, reading, writing, and cultural awareness through a communicative approach. Primary emphasis on student's active use of the language. Recommended to the highly motivated student. Proficiency target level: Intermediate high; the successful student will be able to handle a variety of basic communicative tasks and social situations. Recommended: Completion of FR 102 or 255; or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 257. 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 255; 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 271A. Readings in French Literature (African & Caribbean). 3 Credits. Emphasizes skills for reading in French. Reading and discussion of accessible works of French prose and poetry written by African and Caribbean writers. Fulfills diversity requirement for AAOT degree. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251, or 257, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.


FR 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. Fulfills diversity requirement for AAOT degree. Recommended: Completion of second year French at the college level, simultaneous enrollment in FR 203, 251 or 257, or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 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, FR 251 or FR 257, 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, FR 251 or FR 257, 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, but students also practice listening and reading. Recommended: Successful completion of second year French at the college level or instructor permission. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

FR 290B. French Composition. 2 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 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 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 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/AAS, Science, Math, Computer Science/AGS, 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/AGS, 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/AGS, 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/AAS, Science, Math, Computer Science/AGS, 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: Science, Math, Computer Science/AAOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/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 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 107. Geography of Global Issues. 4 Credits. Examines human, cultural, and environmental geography placed in context with current issues of social, economic, and political globalization. Includes information on global spatial patterns of agriculture; industrial, post-industrial, and sustainable development; rural-to-urban migration; religious, political and resource conflicts; and cultural landscapes. Uses regional examples to illustrate geographic concepts. 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 202. Geography of Europe. 4 Credits.
Introduces the physical and human characteristics of Europe, including the natural environment, population distribution and settlement, cultural coherency and diversity, geopolitical framework, and economic and social development. Analyzes the ways in which humans have arranged politically the territory of Europe, and the conflicts that take place in this continent. Examines the geographical basis of the European economic and political integration. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. This course fulfills the following GE requirements: Social Sciences/AAT, 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 complexity of life within the region. Examines the Middle East as a culturally diverse region (i.e. not a monolith) and explores the diverse value systems held by different Middle Eastern societies. Focuses on population issues, urbanization processes, traditionalism, modernity, male-female relations, family, religion, ethnic identity, and nationalism. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 206. Geography of Oregon. 4 Credits.
Examines the processes that create the 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/AAT, 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 changes, 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/AAT, 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 215. Geography of Latin America. 4 Credits.
Explores the physical, cultural, and economic forces that have contributed to the creation of Latin America as a distinctive region. Analyzes the impact of large scale issues such as global trade, environmental degradation, and the debt crisis on the changing social and demographic patterns of the region. Includes the study of spatial dimensions and the distribution patterns of phenomena such as population mobility, urbanization, poverty, and slum formation. Explores why Africa has become a place of such deep contrasts between crisis and hope. Focuses on breaking down the stereotypes of one Africa and deepening knowledge of this multifaceted continent in both a historical and current context. Prerequisite: 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 221. Field Geography: The Local Landscape. 4 Credits.
Presents field research methods in human geography and applications of GIS Works 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/AAT, 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.

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/AAT, 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 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 automated 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 244. Interactive Map Design. 4 Credits.
Introduces interactive and web-based mapping technologies and applications. Develops knowledge and skills to plan, design, develop, and publish custom interactive, web-based maps. Covers how to prepare spatial data and apply cartographic principles to web maps. Prerequisite: GEO 265. Audit available.

GEO 246. Remote Sensing and Image Analysis. 4 Credits.
Provides an overview on the creation and production of print and web portfolios. Includes remotely sensed data acquisition and analysis, aerial photographs and photogrammetry, visual image interpretation, characteristics of various sensing systems, and digital image processing techniques. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GEO 250. Geography of Africa. 4 Credits.
Introduces the various historical, social, economic, physical, and geographic factors that have contributed to the modern African landscape. Includes the study of spatial dimensions and the distribution patterns of phenomena such as population mobility, urbanization, poverty, and slum formation. Explores why Africa has become a place of such deep contrasts between crisis and hope. Focuses on breaking down the stereotypes of one Africa and deepening knowledge of this multifaceted continent in both a historical and current context. Prerequisite: 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 264. Maps & Geospatial Concepts. 4 Credits.
Introduces principles 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 265. Introduction to GIS (Geographical Information Systems). 4 Credits.
Provides a conceptual overview and hands-on experience using ArcGIS software. Introduces basic principles of maps and map design and uses ArcGIS to create, edit, display, query and analyze geographic and tabular data and to create maps and data tables. Prerequisite: 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

GEO 266. GIS Analysis. 4 Credits.
Provides 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 265; or instructor permission. Audit available.

GEO 267. Application Topics in Geographic Information Systems. 4 Credits.
Exploring current trends and applications in GIS with a focus on one or more of the analytical techniques first learned in prerequisite courses. Attention to institutional and professional GIS application issues and programming environments. Prerequisite: GEO 266; or instructor permission. Audit available.

GEO 270. Creating a Map Portfolio. 1 Credit.
Provides an overview on the creation and production of print and web portfolios in preparation for employment as GIS professionals and/or cartographers. Prerequisite: GEO 266. Prerequisite: GEO 267. Audit available.

GEO 280A. 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 instruction. Under the employer’s supervision the student learns to apply classroom theory to actual work situations. Department permission required. Audit available.

GEO 280B. CE: Geography - Seminar. 1 Credit.
Provides a forum in which to discuss work experiences with peers and instructor. Department permission required. Audit available.
GEO 298. Independent Study: Geography. 4 Credits.
Offers individualized study at an advanced level in areas of geography not considered in other courses to meet special interests or program requirements. Requires completion of a term project and readings approved by the instructor. Recommended: prior study of geography. Audit available.

Geology

G 148. Volcanoes and Earthquakes. 4 Credits.
Explores the Earth's volcanism and seismicity examining its nature, geographic distribution, frequency, magnitude, and relation to plate tectonics. Covers the assessment of hazards and risks associated with volcanoes and earthquakes and how communities can manage these hazards and risks. Includes a weekly lab. 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

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 field trip 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 184. Global Climate Change. 4 Credits.
Covers characteristics of Earth's climate system. Includes the atmosphere, ocean, biosphere, and solid Earth as well as past, present, and future climate change and future mitigation and adaptation efforts. Includes a weekly lab. 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

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 concepts through geology concepts through 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 Geography. 4 Credits.
Introduces physical geography 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

G 202. Physical Geography. 4 Credits.
Introduces physical geography 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/AAT, Science, Math, Computer Science/AS, 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/AAT, 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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

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/AAT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

G 298A. Geology Independent Study. 1 Credit.
Offers 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.
Offers 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.
Offers 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/AAS, Arts and Letters/AGS.

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/AAS, Arts and Letters/AGS.

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/AAS, Arts and Letters/AGS.
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 simultaneous 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 simultaneous enrollment in GER 101 or 150; or instructor permission. Audit available.

GER 111C. 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 102 or 151; 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 150 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 German vocabulary of first year German in a conversational format. Recommended: Completion of or simultaneous enrollment in GER 102, or 151; or instructor permission. Audit available.

GER 113A. First Year German Conversation. 3 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 GER 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.

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/AS, Arts and Letters/AAS, 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 GER 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.

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 212A. Intermediate German Conversation. 3 Credits.
Stresses conversational skills at the second year level. Continues the work of GER 211A. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212B. Intermediate German Conversation. 2 Credits.
Stresses conversational skills at the second year level. Continues the work of GER 211B. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 212C. Intermediate German Conversation. 1 Credit.
Stresses conversational skills at the second year level. Continues the work of GER 211C. Recommended: Completion of or simultaneous enrollment in GER 202 or instructor permission. Audit available.

GER 213A. Intermediate German Conversation. 3 Credits.
Stresses conversational skills at the second year level. Continues the work of GER 212A. Recommended: Completion of or simultaneous enrollment in GER 203 or instructor permission. Audit available.

GER 213B. Intermediate German Conversation. 2 Credits.
Stresses conversational skills at the second year level. Continues the work of GER 212B. Recommended: Completion of or simultaneous enrollment in GER 203 or instructor permission. Audit available.

GER 213C. Intermediate German Conversation. 1 Credit.
Stresses conversational skills at the second year level. Continues the work of GER 212C. Recommended: Completion of or simultaneous enrollment in GER 203 or instructor permission. Audit available.

GER 260A. 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: interracial and cultural relations, ethnic conflict, Germany during the Second World War, economic, social and historical perspectives in post-war Germany, roles of German men and women, self-discovery, German humor, East versus West. Course conducted in English and all films with English subtitles. Students may take only one course in the 260 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GER 260B. German Culture Through Film. 2 Credits.
Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in four German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, Germany during the Second World War, economic, social and historical perspectives in post-war Germany, roles of German men and women, self-discovery, German humor, East versus West. Course conducted in English and all films with English subtitles. Students may take only one course in the 260 series: A, B, or C. Audit available.

GER 260C. 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: interracial and cultural relations, ethnic conflict, Germany during the Second World War, economic, social and historical perspectives in post-war Germany, roles of German men and women, self-discovery, German humor, East versus West. Course conducted in English and all films with English subtitles. Students may take only one course in the 260 series: A, B, or C. Audit available.

GER 261A. German Culture Through Film. 3 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: interracial and cultural relations, ethnic conflict, the New German Cinema, morality of the bourgeoisie, alienation of youth, roles of German men and women, self-discovery, moral disaster of the Nazi legacy, authority and rebellion. Course conducted in English and all films with English subtitles. Students may take only one course in the 261 series: A, B, or C. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

GER 261B. German Culture Through Film. 2 Credits.
Enhances understanding of German culture and contemporary society through analysis of cultural and social issues presented in five German films. May explore issues including but not limited to: interracial and cultural relations, ethnic conflict, the New German Cinema, morality of the bourgeoisie, alienation of youth, roles of German men and women, self-discovery, moral disaster of the Nazi legacy, authority and rebellion. Course conducted in English and all films with English subtitles. Students may take only one course in the 261 series: A, B, or C. Audit available.
GER 261C. German Culture Through Film. 1 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. 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 is 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. Home Care Activity Training. 1 Credit.
Trains home care providers and adult care home operators to design and implement cognitive, physical, and social-spiritual activities for older adults living in home and adult care home settings to enhance their well-being and quality of life.

GRN 165. 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 horticulture activities reflecting the four seasons for older adults in adult day care, independent and assisted living, and long-term care settings, including senior centers, 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. 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. 2 Credits.
Explores the convergence of gerontology and recent brain science. Presents novel and combinatorial interventions based on recent research on aging brains. Introduces the emerging array of sustainable approaches to engage, stimulate, and enhance older minds. Audit available.

GRN 176. Cognitive Activity Design. 2 Credits.
Explores the challenges of applying emerging, evidence-based research in memory and aging to address real-life cognitive challenges. Includes design and demonstration of innovative cognitive activities that are supported by recent brain science findings. Prerequisite/concurrent: GRN 175. Audit available.

GRN 177. Arts & Cognitive Activity Design. 1 Credit.
Covers the connection between the arts and brain health research in order to create art-related cognitive activities for elders. Includes design and demonstration of creative arts as a sustainable cognitive activity for elders. Explores why creative arts activities have a positive impact on an elder’s brain and how their design is supported by recent brain science findings. Prerequisite/concurrent: GRN 175 and GRN 176. Audit available.

GRN 181. Exploring the Field of Aging. 2 Credits.
Introduces the range of emerging professional opportunities in the field of aging. Explores and prioritizes potential career pathways. Includes career and labor market research; assessment of passions, interests, experiences and transferable skills; informational interviews, site visits, and networking; career educational/training goal setting and planning. Audit available.

GRN 233. Supporting End of Life. 4 Credits.
Provides health care workers, caregivers, religious and spiritual counselors, social workers, fiduciaries, and family members the knowledge and skills to support the end of life process with dying persons and their families. Explores the physical, emotional, spiritual, legal, and financial aspects of dying, as well as grief and bereavement. Audit available.

GRN 235. Introduction to Dementia Care. 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 repetitive incident reports, implementing fall prevention programs, and developing family education and support programs. Prerequisite: GRN 235. Audit available.

GRN 237. End of Life Therapies. 1 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 and 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 to 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 process, care planning, resource management, service provider and financial coordination, documentation and accountability, ethics and confidentiality, advocacy, and evaluation. Introduces strength-based, person-centered, and empowerment models. Audit available.

GRN 245. Introduction to Guardianship in Oregon. 1 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 service, 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 265. Activity Professional Certification Training 1. 2 Credits.
Provides activity professionals the knowledge and skills to work with older persons in long term care, adult daycare and community-based settings. Meets Federal Standards and Scope of Practice Guidelines for designers and managers of activity programs in Skilled Long Term Care Facilities, Assisted Living facilities or Alzheimer’s (Memory Care) Units. Prerequisites: GRN 165 or instructor permission. Audit available.

GRN 266. Activity Professional Certification Training 2. 2 Credits.
Provides activity professionals advanced knowledge and skills to manage and consult for activity programs in long-term care, adult daycare and community-based settings. Meets Federal Standards and Scope of Practice Guidelines for designers and managers of activity programs in Skilled Long Term Care Facilities, Assisted Living facilities or Alzheimer’s (Memory Care) Units. Prerequisites: 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 interdisciplinarity collaboration/integration in healthcare delivery; medical terminology; therapeutic garden design; 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 based on an interdisciplinary approach. Covers cultural requirements, pests, diseases, propagation and interior use. 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 267 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 267 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 garden design, maintenance and programming for children and frail elders. Students must have completed GRN 269 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. 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 other special needs populations. Focuses on professional skill mastery and continuing education planning. Students must have completed GRN 270 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. 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 and strolling gardens for assisted living facility programs, and special needs gardens. Students must have completed GRN 271 or the equivalent course offered through the Legacy Therapeutic Horticulture Program. Prerequisite: GRN 271. Audit available.

GRN 273. Interior Plants. 3 Credits.
Focuses on identification of interior plants commonly used in therapeutic horticulture programming, houseplants as leisure/hobby, and interior plantscaping. Covers cultural requirements, pests, diseases, propagation and interior use. Audit available.

GRN 280A. CE: Gerontology Internship. 1-3 Credits.
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.
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. Prerequisite: GRN 280B. 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 II. 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. Focuses on design process, presentation, and industry standards. Prerequisites: GD 101, GD 114, and GD 120. Prerequisite/concurrent: GD 140 or GD 150.

GD 124. Graphic Design 3. 3 Credits.
Explores basic graphic design concepts. Emphasizes research, symbol design and continuity of design elements. Identifies specific requirements for two- and three-dimensional design projects. Prerequisites: GD 122, GD 140, and GD 150. Prerequisite/concurrent: GD 141 and GD 151.

GD 140. Digital Page Design I. 3 Credits.
Explores beginning level graphic design and publishing using professional page layout software. Introduces typography design, basic page layout, computer file management, professional methods of design organization, keyboard work and the foundations of computer use in single-page layouts. To be taken sequentially. Placement permission slip required. Prerequisites: GD 101, GD 114 and GD 120. Prerequisite/concurrent: GD 122.
GD 141. Digital Page Design 2. 3 Credits.
Covers layout and design of multi-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 layout consisting 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 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, eyeball, 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.
Explore branding, logo design and identity systems. Research target audience and create design solutions that communicate the client and product image through logos, logotypes, icons, and symbols. Advanced computer production techniques build on previous coursework. Required: Second-year standing in the Graphic Design program Prerequisite: GD 221.

GD 228. Professional Graphic Design Practices. 3 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 142.

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 course. 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. 2 Credits.
Develops knowledge of health care ancillary services, laboratory tests, and imaging services. Prerequisite: HIM 110, HIM 120. Corequisite: HIM 107. Audit available.

HIM 107. Ancillary Information Analysis Lab. 2 Credits.
Provides an opportunity to analyze diagnostic tests and results in an electronic health record format and identify the medical necessity for the tests. Prerequisite: HIM 110, HIM 120. Corequisite: HIM 105.

HIM 110. Health Record Content in Acute Care Settings. 3 Credits.
Introduces the concept of health information management and health informatics including the components of content, use and structure of healthcare data along with information keeping practices in both paper and electronic systems. Corequisite: HIM 120. Audit available.

HIM 120. Health Record Content in Acute Care Settings Lab. 2 Credits.
Provides an opportunity to practice auditing health records and recognize key elements of health record documents. Corequisite: HIM 110.

HIM 121. Legal and Ethical Aspects of Healthcare. 3 Credits.
Provides an overview of the legal system and the legal principles that govern the delivery of healthcare. Covers patient confidentiality and the disclosure of patient information. Includes codes of ethics and bioethical issues facing today's healthcare professionals. 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 integumentary, skeletal, muscular, and nervous systems. 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 systems. Includes some coverage of human development, human genetics, and immunology. Prerequisites: HIM 128. Audit available.

HIM 131. Medical Science. 5 Credits.
Explores concepts of disease processes as they relate to the normal physiology of the major body systems. Prerequisites: (HIM 128 and HIM 129) or (BI 121 and BI 122) or (BI 231, BI 232 and BI 233). Audit available.

HIM 136. Medications. 3 Credits.
Covers appropriate drug uses, effects, precautions, and routes of administration. Reviews common prescription abbreviations, forms of medications and basic drug categories. Prerequisites: (HIM 128 and HIM 129) or (BI 121 and BI 122) or (BI 231, BI 232 and BI 233). Audit available.

HIM 141. Health Record Content in Non-Acute Care Settings. 3 Credits.
Addresses the concepts of health information management including components of the content, use, and structure of non-acute health care data. Audit available.

HIM 182. Healthcare Delivery Systems. 3 Credits.
Covers the past, present, and future influences on the delivery of healthcare. Presents provider organizations and settings in healthcare, financing of healthcare, causes and characteristics of healthcare utilization in the Unites States, regulation and monitoring of healthcare systems and ethical issues associated with healthcare technology. Audit available.

HIM 270. ICD Procedure Coding. 4 Credits.
Covers classification of procedures utilizing the current ICD coding system. Prerequisite: HIM 105, HIM 107 and (HIM 128 and HIM 129) or (BI 121 and BI 122) or (BI 231, BI 232 and BI 233). Audit available.

HIM 271. Quality Improvement in Healthcare. 2 Credits.
Covers medical staff organization, physician credentialing, and quality improvement techniques in the healthcare setting. Prerequisites: HIM 110, HIM 120. Prerequisite/concurrent: HIM 274. Audit available.

HIM 272. Health Information Management. 3 Credits.
Covers principles of personnel supervision and management of a health information department. Prerequisite/concurrent: HIM 277. Audit available.

HIM 273. ICD Diagnosis Coding. 4 Credits.
Covers classification of diseases utilizing the current ICD coding system. Prerequisite: HIM 105, HIM 107, HIM 131, HIM 136. Audit available.

HIM 274. Quality Improvement in Healthcare Lab. 2 Credits.
Provides an opportunity to practice reviewing health records for utilization review activities, assessing admission criteria, incident reporting and compliance with medical staff bylaws, accreditation standards and federal and state regulations. Corequisite: HIM 271.

HIM 275. CPT Coding. 3 Credits.
Introduces coding and classification systems for outpatient procedures and ambulatory care facilities. Prerequisite: HIM 105, HIM 107, HIM 131. Audit available.

HIM 276. Coding Capstone. 2 Credits.
Includes the application of all ICD and CPT code systems in the appropriate settings. Uses case-summary coding exercises for enhanced learning. Prerequisites: HIM 270, HIM 273, HIM 275.
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 bio-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 242. 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. Inspires close examination and evaluation of factors that influence one's personal health and wellness. Involve critical analysis of health information related to the biological, psychological, sociocultural, and environmental impacts on personal health from a wellness perspective. Audit available.

HE 251. Community and Public Health Issues. 4 Credits. Examines cultural, social, behavioral and environmental public health issues. Investigates the causes and potential solutions for current community health issues, and offers the organization of community and healthcare agencies. Explores career opportunities in community health. Includes community-based 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/or 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. Audit available.

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 and human health from a wellness perspective. Recommended: Students have a WR 121 skill level. 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. Recommended: 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 295. Audit available.

History

HST 100. Introduction to History. 4 Credits. Provides a general introduction to the nature and methods of history. Develops awareness of the importance of historical literacy and thinking. Develops individual 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/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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 102. History of Western Civilization: Medieval to Modern. 4 Credits.
Covers 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 102H. History of Western Civilization: Medieval to Modern - Honors. 4 Credits.
Honors version of HST 102. Covers 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 103. History of Western Civilization: Modern Europe. 4 Credits.
Covers the history of nineteenth- and twentieth-century Europe, including the Industrial Revolution, nationalism, imperialism, socialism, the Russian Revolution, Nazism, world wars and the 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/AAS, Social Sciences/AAOT, 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 104. History of the Middle East. 4 Credits.
Surveys the Middle East from ancient to modern times. 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/AAS, Social Sciences/AAOT, 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/AAS, Social Sciences/AAOT, 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/AAS, Social Sciences/AAOT, 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/AAS, Social Sciences/AAOT, 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 the social, political, economic and cultural developments of Colonial America and the Early Republic of the United States. Includes: Native Americans pre- and post- European colonization (Spanish, French, Dutch and English); European indentured servitude and African slavery; Salem Witch Trials; Great Awakening; French and Indian War; American Revolution, the Declaration of Independence and the American Constitution; and the Bill of Rights; Whiskey Rebellion; War of 1812; Missouri Compromise; American Indian Removal. 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. GPA 3.25 minimum. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 202. History of the United States 1840-1914. 4 Credits.
Examines the social, political, economic and cultural developments of the United States from 1840 to 1914. Includes: The Women's Rights Movement, Manifest Destiny, the U.S.: Mexican War, slavery, abolitionism and the growing sectional crisis between the North and South, Abraham Lincoln and the Civil War, Reconstruction, westward migration and its impact on Native Americans, America's overseas empire, and the Progressive Era. 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 203. History of the United States 1914 to Present. 4 Credits.
Examines the social, political, economic and cultural developments of the United States from 1914 to the present. Includes: World War I; 19th Amendment (women's suffrage); "flying" 1920s; civil rights, Great Depression; World War II; Cold War (Korea, "Red Scare," Cuban missile crisis, Vietnam, fall of the Berlin Wall); Civil Rights movements, legislation and Martin Luther King, Jr.; The Great Society and War on Poverty; Watergate and Iran/Contra scandals; 9/11. 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 204. History of Women in the U.S.: Pre-colonial to 1877. 4 Credits.
Examines the lives of women in terms of family relations, religion, culture, sexuality and reproduction, and work roles, as well as educational opportunities and social reform activities. Explores diversity in terms of class, race, ethnicity, legal status, and region. 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 205. History of Women in the U.S.: 1877 to Present. 4 Credits.
Explores women's work in the growing industrial economy, Puritan and society'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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.

HST 218. American Indian History. 4 Credits.
Covers history of American Indians in what is now the United States from pre-Columbian times to the present, exploring the cultural diversity among Native peoples, tribal sovereignty, conflicts and accommodations with European Americans, and the historical roots of contemporary issues that emphasize American Indians as a vital part of the shared history of the 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/AAS, Social Sciences/AAOT, 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 the context of the United States through topical topics such as courtship, marriage, reproduction, violence, colonialism, homosexuality, and work. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAS, Social Sciences/AAOT, 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/AAS, Social Sciences/AAOT, Social Sciences/ASOT-B.
HST 246. Religion in the United States to 1840. 4 Credits.
Covers the basic features and effects of Native American religious revitalization movements, European backgrounds of Christian denominations, development of different religious groups, church-state relations, the struggle for religious liberty and how they shaped the beliefs, behaviors and institutions of colonial America and the early United States. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 247. Religion in the United States since 1840. 4 Credits.
Covers basic features of Native American religions, European backgrounds of Christianity, development of different religious groups in the United States and their impact on American life. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 250. African American History to 1877. 4 Credits.
Presents a framework for understanding the Black experience from African origins to the end of Reconstruction. Includes West African cultures, the Middle Passage, the experiences of free and enslaved African Americans from the colonial through postbellum periods including the abolition movement. Covers African American agency through churches, political organizations, and social institutions and explores African American culture through literature, art, music, and other cultural forms. 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 251. African American History since 1877. 4 Credits.
Examines the broad range of experiences of African Americans from Reconstruction to the present. Explores the relationship of Blacks to the wider society as well as the inner dynamic of the Black communities including identity issues, key individuals and organization in the struggle for social justice, especially the destruction of legal segregation. Devotes attention to the rural South and the urban North as Blacks used a variety of means to empower African American communities through the civil rights revolution. 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/AAT, 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. Focus on post-contact history: the Spanish conquest, colonial Mexico, independence and its aftermath to contemporary times. Emphasizes 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 271. History of Central America and the Caribbean. 4 Credits.
Covers Central American and Caribbean history from the pre-Columbian era to the present. Focuses on post-contact history including colonialism, independence, revolution, nation-building and international relationships. Emphasizes social, political and cultural developments and contributions by a diversity of Central American and Caribbean peoples. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 274. African American History I. 4 Credits.
Presents a framework for understanding the Black experience from African origins to the beginning of the Civil War. Includes West African cultures, the Middle Passage, the experiences of free and enslaved African Americans from the colonial through antebellum periods including the abolition movement. Covers African American agency through churches, political organizations, and social institutions and explores African American culture through literature, art, music, and other cultural forms. 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/AAT, Social Sciences/AS, Social Sciences/AAS, 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. Devotes particular attention to Reconstruction, the construction of social, political and economic organizations, the migration of African Americans from the rural South to the urban North, and the social, political, economic, artistic and intellectual endeavors that underscored the struggle for social justice by the Black American community. 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 276. African American History III. 4 Credits.
Examines the broad range of experiences of African Americans from the beginning of the New Deal to the 1990s. Explores the relationship of Blacks to the wider society as well as the inner dynamic of the Black communities including identity issues, key individuals and organization in the struggle for social justice, especially the destruction of legal segregation. Devotes attention to the rural South and the urban North as Blacks use a variety of means to empower African American communities through the civil rights revolution. 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 277. History of the Oregon Trail. 4 Credits.
Examines the history of the Oregon Trail including the predecessors of the route, the migrations of the people who used the route, the trail and its variations, life along the trail, and the impact of the migration. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

HST 278. Russian History I. 4 Credits.
Surveys the cultural, social, political, and economic forces that shaped Russian history from the ninth through the eighteenth centuries. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 279. Russian History II. 4 Credits.
Surveys the cultural, social, political, and economic forces that shaped Russian history from the late eighteenth 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: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 280A. Cooperative Education: History. 1-4 Credits.
Extends knowledge of history through work in settings which provide learning experiences supplementing classroom learning. Student must have previously taken a history course or be currently enrolled in a history course. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores or Instructor permission required.

HST 284. History of Africa. 4 Credits.
Examines the major themes and issues in the culture and history of the African continent, considering 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. Includes colonialism, independence, and the social, political and cultural contributions of Africa's diverse people to world history. Recommended: completion of WR 115 with a C or better grade. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, 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/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

HST 298A. Independent Study: History. 2 Credits.
Offers individualized study in a substantial area of history to meet special interests. Involves completion of a project and readings on a substantial area of study approved by the instructor. Prerequisites: Instructor permission.

HST 298B. Independent Study: History. 4 Credits.
Offers advanced, individualized study in a substantial area of history 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. Prerequisites: Instructor permission.
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. Prepares students to succeed in multiple academic environments. Develops skills required to transfer. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and 3.25 GPA.

HON 201. Capstone Experience. 2 Credits.
Culminates Honors Program study. Formalizes development of transfer portfolio. Scaffolds completion of capstone project. Prerequisites: HON 101, WR 122, 16 credits in designated honors courses and 3.25 GPA.

Horticulture

HOR 226. Plant Materials - Deciduous. 3 Credits.
Covers botanical characteristics and field identification of common landscape plants. Emphasizes cultural requirements, pests, diseases, and landscape uses of plants with a concentration on deciduous material and plants of fall interest. Audit available.

HOR 227. Plant Materials - Evergreens. 3 Credits.
Covers botanical characteristics and field identification of common landscape plants. Emphasizes cultural requirements, pests, diseases, and landscape uses of plants with concentration on evergreen material and plants of winter interest. Audit available.

HOR 228. Plant Materials - Flowering. 3 Credits.
Covers botanical characteristics and field identification of common landscape plants. Emphasizes cultural requirements, pests, diseases, and landscape uses of plants with a concentration on flowering material and plants of spring interest. Audit available.

HOR 255. Spring Annuals and Perennials. 3 Credits.
Identification of Spring herbaceous annuals and perennials most commonly used in landscapes. Care, culture, pests, diseases, propagation and landscape use. Audit available.

HOR 266. Interior Plants. 3 Credits.
Identification of interior plants commonly used in interior plantscaping. Cultural requirements, pests, diseases, propagation and interior use covered. Audit available.

HOR 272. Summer Annuals & Perennials. 3 Credits.
Covers botanical characteristics and field identification of common annuals and perennials. Emphasizes cultural requirements, pests, diseases, and landscape uses of plants with a concentration on annuals and perennials. Audit available.

HOR 285. Permaculture Design. 7 Credits.
Covers principles of permaculture for both urban & rural applications and sustainable human settlements. Covers landscape analysis, ecological planning & design methods, organic food production, food security, natural soil improvement, integrated animal systems, water harvesting, conservation and management, forest gardening, techniques and design strategies. Upon completion of this course students will be awarded a Permaculture Design Certificate through the Cascadia Permaculture Institute. Audit available.

HOR 290. Introduction to Landscape Design. 3 Credits.
Basic steps and elements used in landscape design. Establishment of specific design criteria, field measurements and basic drawing techniques required in production of finished design. Audit available.

HOR 291. Landscape Design Process. 3 Credits.
Fosters a critical thinking approach to landscape design. Covers methods for the use of line, proportion, color, scale and texture in the creation of landscape spaces. Includes the study of landscape architectural history and historical sites. Recommended: A total of 9 credits of HOR 226, HOR 227, HOR 228, HOR 255, HOR 272, LAT 262. Prerequisites: HOR 290 and (HOR 226, or HOR 227, or HOR 228, or HOR 255, or HOR 272, or LAT 262). Audit available.

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 substratum of human activity, the interplay of 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.
Offers critical examination of the relationship between people and technology. Uses insights derived from a study of the Humanities in conjunction with those from science. Science and technology are social 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.
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 204. History of Africa. 4 Credits.
Introduces students to some major themes in the history of the African continent from ancient times to the present. It is the first course in the Humanities sequence on Africa, and provides a wide background for subsequent courses. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. 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/AAOT, 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/AAOT, 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 literature, contemporary multicultural readings, experiential exercises and films. Issues of diversity, personal growth and interpersonal relationships are explored within the context of leadership development. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

Interior Design

ID 120. Interior Products and Materials I. 3 Credits.
Presents analysis and evaluation of materials and products utilized in the interior design profession. Focuses on the properties, cost, sustainability and installation of materials. Prerequisites: ID 131 and (WR 115 or placement into WR 121). Audit available.
ID 121. Sustainable Materials for Residential Interiors. 3 Credits.
Covers the study of the environmental impact of materials used in residential interior design. Includes analysis and evaluation of materials based on multiple types of criteria and information. Prerequisites: WR 115 and MTH 20 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.
Presents an analysis of interior design and furnishings from the 19th century to the present. Includes contemporary usage as well as the mixing of period furniture styles. Prerequisites: 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 for residential design. Covers creation and modification of drawings 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. Recommended: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisites: ARCH 127 or ARCH 237. 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: ID 131 and (ARCH 126 or ID 125). Prerequisite/concurrent: ARCH 100. Audit available.

ID 133. Space Planning. 3 Credits.
Covers functional and aesthetic design requirements in residential space planning, kitchens and storage spaces. Relates housing aspects to needs of individuals, families, and special groups. Prerequisites: WR 115 and MTH 20 or equivalent placement test scores, (ID 131 or ARCH 161), (ID 125 or ARCH 126), ARCH 110, ARCH 124, and ARCH 132. Prerequisite/concurrent: ARCH 100. 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. Prerequisites: ID 120 or ID 121. Audit available.

ID 138. Introduction to Kitchen and Bath Planning. 3 Credits.
Introduces 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 and (ID 125 or ARCH 126). Audit available.

ID 230. Textiles for Interiors. 3 Credits.
Covers knowledge and critical thinking skills required for the identification, selection, usage and care of textile products. Prerequisite: ID 131. Audit available.

ID 232. Business Communication for Interior Design. 3 Credits.
Outlines the importance of persuasive communication in matters of sales, client management, and project coordination. Covers product sourcing, business taxes, and budgeting. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores, and ID 131, ID 135, and ID 236.

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-directed 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.
Covers interior lighting as it relates to residential interiors. Includes terminology, lamps, fixtures, cost factors, developing lighting plans, design techniques and energy saving considerations. Prerequisites: (ID 131 or ARCH 201) and (ID 125 or ARCH 126), and placement into WR 121. Audit available.

ID 238. Advanced Kitchen and Bath Planning. 3 Credits.
Integrates advanced understanding of design principles and elements to analyze and evaluate functionality and aesthetic principles for residential kitchen and bath planning. Includes a Universal Design as it relates to the kitchen and bath and incorporates an advanced understanding of the guidelines as established by the National Kitchen and Bath Association. Prerequisites: (ID 138 or BCT 229) and ARCH 132. 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.

International Studies

INTL 201. Introduction to International Studies. 4 Credits.
Examines themes such as geography, history, culture, economics, politics and religion from global and interdisciplinary perspectives. 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-

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. 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 111B. First Year Japanese Conversation. 2 Credits.
Provides practice of structures and vocabulary of first year Japanese in a conversational format. 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 111C. 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. 2 Credits.
Provides extended practice for better understanding of the materials presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission. Audit available.

JPN 113B. First Year Japanese Conversation. 1 Credit.
Provides extended practice for better understanding of the materials presented in JPN 103. Recommended: Completion of JPN 102 or instructor permission. Corequisite: JPN 103. Audit available.

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 150 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 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/AAOT, Arts and Letters/AS, 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: JPN 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.

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 212B. 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 212C. Intermediate Japanese Conversation. 1 Credit.
Provides 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 203. Recommended: Completion of JPN 202 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 family, social roles, friendship, pop culture, mortality, philosophies, economics 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 260B. 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 cultural 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.

JPN 261A. 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 262A. 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.

Journals

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 style 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 Media. 4 Credits.
Covers the theory and application of visual communication in media. Develops visual literacy and media skills for message creators/consumers. Critically examines visual message components, goals, effects and ethical practices. This course is also offered as COMM 204; a student who enrolls in this course a second time under either designation will be subject to the course repeat policy. 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.

Landscape Technology

LAT 101. Introduction to the Landscape Industry. 2 Credits.
Introduces the landscape industry and related professions through guest speakers and field trips. Provides an opportunity to learn directly from industry professionals about the many career pathways available. Audit available.

LAT 102. Plant Establishment and Maintenance. 3 Credits.
Introduces industry standards for the selection, establishment and maintenance of landscape plants. Covers selection, planting, watering, fertilizing, pruning and maintenance of landscape plants. Provides hands-on experience with plant establishment and maintenance. 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.

LAT 104. Pesticides. 3 Credits.
Covers federal and Oregon pesticide laws, safety, application equipment, types of pesticides and alternatives to pesticides. Includes basic information for use in preparation for state pesticide certification. Credit is accepted towards recertification of valid Oregon pesticide license. Audit available.

LAT 105. 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.
Covers materials, installation, and maintenance for residential and small commercial spray and drip irrigation systems. Includes applied math calculations used for basic hydraulics and system layouts. Includes installation of sprinklers and drip zones. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 plant propagation. Audit available.

LAT 110. Grounds Maintenance. 3 Credits.
Introduces the landscape industry and related professions through guest speakers and field trips. Provides an opportunity to learn directly from industry professionals about the many career pathways available. Audit available.

LAT 201. 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.

LAT 102. Plant Establishment and Maintenance. 3 Credits.
Introduces industry standards for the selection, establishment and maintenance of landscape plants. Covers selection, planting, watering, fertilizing, pruning and maintenance of landscape plants. Provides hands-on experience with plant establishment and maintenance. 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.

Portland Community College

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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 112. Vegetated Private Water Quality Facilities Management. 1 Credit.
Introduces the purpose and function of vegetated private water quality facilities (VPWQF), inspections, and management. Includes the skills and knowledge required to be listed as a Preferred Maintenance Contractor on the Clean Water Services website.

LAT 115. Tool and Equipment Safety, Operation and Maintenance. 3 Credits.
Introduces common tools and equipment used in the landscape industry. Covers safe operation and maintenance of common landscape tools and equipment. Provides the opportunity for hands-on experience with tools and equipment. 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.
Covers aspects of plant arrangement in landscape projects with emphasis on plant use, styles of planting, color, texture, form and scale. Recommended: A total of 9 credits of HOR 226, 255, 272, or LAT 262. Prerequisite: HOR 290 and (HOR 226, or HOR 227, or HOR 228, or HOR 255, or HOR 272, or LAT 262). Audit available.

LAT 217. Landscape Drafting. 3 Credits.
Introduces basic drafting skills and layout techniques to produce quality design drawings. Includes advanced drafting equipment, linework, lettering and drafting shortcuts.

LAT 219. Landscape Illustration. 3 Credits.
Covers basic principles of graphic presentation for landscape design. Includes 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 236. 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 232. 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 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.
Covers math skills (arithmetic, geometry and basic algebra) necessary to solve problems common to the landscape industry such as business, hydraulic, construction, volume, area pesticide rate and fertilizer rate problems. Recommended: MTH 60. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

LAT 240. Tree Care. 3 Credits.
Introduces principles and practices of modern arboriculture (tree care). Covers cabling and bracing, 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.
Covers the identification of common diseases, insects and weeds that affect the normal development of horticultural plants and associated controls. Qualifies for 15 hours of recertification for State of Oregon Pesticide Certification. Audit available.

LAT 262. Native Plants of Oregon. 3 Credits.
Covers common native plants of Oregon and their environmental requirements. Introduces adaptations of native plants and their uses in traditional landscapes and restoration projects. Audit available.

LAT 264. Landscape Estimating and Bidding. 3 Credits.
Presents methods and mechanics of estimation. Includes interpretation of specifications and drawings, material take-offs, labor, equipment, contingency, and overhead calculations, pricing strategies, production rates, bid procedures, recordkeeping, and computer estimation. Prerequisite: LAT 236. Audit available.

LAT 271. Computer Aided Landscape Design. 3 Credits.
Explores site designer software and its use in landscape design. Covers computer aided design (CAD) techniques needed to produce finished landscapes designs, plant lists, and reports. 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, green streets, raingardens, 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.
Introduces landscape low voltage night lighting. Covers electricity fundamentals, layout, bulbs and fixtures, transformers, wire sizing and connections, and lighting design. Includes installing a night lighting system. Audit available.

LAT 276. Employment & Careers in the Landscape Industry. 2 Credits.
Provides an overview of Landscape industry career fields available and the necessary job search skills to be competitive in the marketplace. Includes development or refinement of job search materials, applications, resumes, cover letters, portfolios, interview skills, informational interviews and social media presence. Must be enrolled in a second year of an LAT degree program. Prerequisites: Instructor approval required. Audit available.

LAT 277. Landscape Technology Capstone. 3 Credits.
Introduces landscape low voltage night lighting. Covers electricity fundamentals, layout, bulbs and fixtures, transformers, wire sizing and connections, and lighting design. Includes installing a night lighting system. Audit available.

LAT 279. Oregon LCP Exam Preparation. 3 Credits.
Provides the opportunity to put landscape design skills to use on a real-world landscape design/installation project in a team setting. Promotes the application and further development of learned skills and techniques in landscape technology program. Improves team-work, organization and project management skills. Must be in the last term of their program. Prerequisites: Instructor approval required. Audit available.

LAT 280. Computer Aided Landscape Design II. 3 Credits.
Continues the exploration of computer aided design techniques introduced in LAT 271, Computer Aided Design. Explores more advanced techniques and broadens understanding and fluency in CAD usage. Covers the application of CAD skills to landscape design challenges. Prerequisite: LAT 271. 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 complements a Cooperative Education work experience. Students must have a designated worksite and be concurrently enrolled in LAT 280A. Department permission required.

LAT 280C. Cooperative Work Experience- Landscape Design. 3 Credits.
Actual landscape design work experience for approved clients utilizing a required set of learning outcomes. Department permission required.

Library
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.
Provides an overview in utilizing the Machinery's Handbook, safe work practices, safe clothing for personal safety, fire prevention in the shop, and hand tool safety. Audit available.

MCH 101. Occupational Health and Safety. 3 Credits.
Introduces the concepts of industrial health and safety regulations, accident causation, and job related safety issues. Requires completion of a Red Cross First Aid course at additional expense to the student. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/concurrent: MCH 100. 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 concepts in machine shop blueprint reading including multi-view projection, sectional and auxiliary views, title block content, and drawing formats. Formats which are the basis for most graphical communication of a part attributes in industry today. Audit available.

MCH 110. Blueprint Reading II. 1.5 Credit.
Covers dimensions, notes, threads, keys and fasteners, and spur gear terminology. Provides instruction in the interpretation of feature size, shape, location, special tolerances, finish treatments and assembly instructions. Prerequisites: 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 dimensioning 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 systems, dividing/index head and formulas as they pertain to thread calculations, gear calculations, speed and feed calculations, and taper calculations. Prerequisite: MCH 100. Audit available.

MCH 121. Manufacturing Processes I. 4 Credits.
Introduces material removal operations emphasizing basic part layout, drilling, manual milling and manual lathe processes with an emphasis on production speeds and feeds. 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, dividers, telescoping gage, combination square, hermaphroditic caliper, surface gage, surface finish gage. Introduces the proper techniques and applications of the basic transfer measurement and comparison tools in measuring holes accurately, scribbling 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, scribing, 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, prick 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. Introduces commonly performed operations of drilling, reaming, counterboring, countersinking, spot facing and tapping on various types of drilling machines used to produce part features to print specifications. Prerequisites: MCH 100, MCH 121, MCH 125, MCH 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 various types of lathes. Introduces the commonly performed operations of threading, drilling, reaming, counterboring, countersinking, spotfacing, tapping, maintaining/aligning, parallel turning, facing, filing, knurling, grooving, cutting radii, cutting tapers, and parting on various types of turning machines used to produce part features to print specifications. Prerequisites: MCH 100, MCH 121, MCH 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, application and operation of the vertical milling machine. Introduces the commonly performed operations and uses of a variety of cutters, accessories, indicators, center/edge finder, clamping methods, squaring a block of material on all 6 sides, finding the edge of a workpiece, drilling/threading a hole, performing circular cutting operations, using the boring head to bore holes on manufactured parts to print specifications. Prerequisites: MCH 100, MCH 121, MCH 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, applications and operation of the horizontal milling machine. Introduces how to set-up horizontal milling machine and saw a slot in a piece of steel, use the indexing head to cut keyways and keyseats, use the Dividing Head to cut a gear, the basic function and use 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; measurement 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 grinder operation by grinding a block square/parallel and perpendicular by applying the required setups and operational sequencing, and grinding of angular surfaces on a workpiece to print specifications. Also introduces grinding wheels and abrasives, selecting, balancing and mounting the grinding wheel and the methods/machines of surface grinding. Prerequisite: MCH 100. Audit available.

MCH 227. CNC Grinders 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. Prerequisite: MCH 226. Audit available.

MCH 238. 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.
Introduces different additive manufacturing technologies and their application. Includes training on the proper set up and operation of a Fused Deposition Modeling (FDM) additive manufacturing machine. CAD solid modeling experience required. Prerequisite: Instructor approval required. 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 point and bench grinder. Introduces the sharpening of drill bits, lathe tools, end mill sides/ends, milling cutters, and various formed relieved cutters, reamers and taps to manufacturers specifications. Prerequisite: MCH 100. Audit available.

MCH 240. Cutting Tool Technology. 2 Credits.
Course teaches setup, specifications and applications 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, accuracy, efficiency and productivity of the workpiece 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 efficiently/required knowledge of the metal to be cut, but also how the cutting tool material and its shape will perform under various machining conditions. Prerequisite: MCH 100. Audit available.

MCH 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.
Presented by means of audio visual presentations, demonstrations, lab experiences, and research activities. Emphasizes the development of skills and knowledge competencies prescribed by business and industry performance standards. Prerequisite: MCH 260, 261. Audit available.

MCH 268. CNC Programming-Mill. 5 Credits.
Introduces basic programming skills used with Fanuc (G&M compatible) controlled CNC machining centers. Prerequisites: MCH 100, 110, 125, 130, 160, 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/tum 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.

Provides an opportunity to work at a manufacturing site. Requires applying the skills learned in the Machine Manufacturing Technology (MMT) program to manufacture real world parts and products. Department permission is required. Offered for one to eight credits based upon the number of clock hours completed at the work site. One credit equals 30 hours of work. Prerequisites: MCH 121 and completion of at least 12 credits of MMT coursework. Audit available.

MCH 282. CNC Router Operation. 3 Credits.
Introduces the basic operation and setup skills used on a computer numerical controlled (CNC) router. Requires an understanding of common CNC mill or CNC router “G” code that operates these machines. Prerequisite: Instructor approval required. 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 286A. Technical Skill Assessment in Manual Machining. 3 Credits.
Covers the application of learned skillsets acquired in the coursework leading to the one-year certificate in manual machining. Includes a hands-on manual machining project which incorporates, but is not limited to, blueprint reading, feeds and speeds, shop math, precision measurement, manual milling, turning, and grinding. Prerequisites: MCH 110, MCH 121, MCH 130, MCH 195, MCH 205, MCH 225. Audit available.

MCH 287A. Technical Skill Assessment in CNC Turning. 3 Credits.
Tests the learned skill sets acquired in the coursework leading to the One-Year Certificate in CNC Turning. Requires a hands-on machining project which incorporates blueprint reading, feeds and speeds, shop math, precision measurement, manual lathe, manual mill, manual CNC lathe programming, and CNC lathe turning. Prerequisite: MCH 121 and MCH 279. Audit available.

MCH 288A. Technical Skill Assessment in CNC Milling. 3 Credits.
Tests the learned skill sets acquired in the coursework leading to the One-Year Certificate in CNC Milling. Incorporates blueprint reading, feeds and speeds, shop math, precision measurement, manual lathe and mill, Mastercam CNC programming, and CNC milling. Prerequisites: MCH 121, MCH 272 and MCH 278A. 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 machine, 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 set up 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 set up, operate, and maintain a Fused Deposition Modeling (FDM) machine using support material, to manufacture prototype or production parts. Requires individuals to prototype a design of their choice using up to five cubic inches of material. Requires CAD solid modeling experience and access to a CAD system that outputs .STL formatted file. Prerequisite: Instructor approval required. Audit available.

MCH 293. CNC Router Fundamentals Orientation. 1 Credit. Introduces set up and operation of a CNC router to manufacture a simple project. Explores CNC router application, and can be 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 or router applications prior to taking the course. Prerequisite: Instructor approval required. Audit available.

MCH 294. 3 Dimensional Digital Laser Scanning Fundamentals. 1.5 Credit. 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. Prerequisite: 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, MRI 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, MRI 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 between normal and abnormal anatomical structures. Primary focus is MR appearance of anatomy but includes correlation with anatomical drawings and CT anatomy. Department permission required. Prerequisite: MRI 111.

MRI 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 assessments and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist and will develop and exhibit proper professional work ethic. Department permission required.

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 assessments and attendance. The student will learn the necessary skills that are required to function in the clinical area as a MR Technologist, and will develop and exhibit proper professional work ethic. Department permission required. Prerequisite: MRI 271 or MRI 121.

MRI 273. MRI Clinical III. 8 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 and misconceptions, 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. 1 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. Addresses 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 to build 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 118. 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 ideals 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 organisation’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 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 is about some good ideas to deal with 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 build 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 effective communication, 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 work relationships, conquer interruptions, manage meetings, and build self-esteem. Audit available.

MSD 142B. Thriving in Transition. 1 Credit.
This 10-hour workshop discusses how to thrive in the midst of the constant change. Topics include understanding the sources of change, proposing change, addressing resistance to change, and successfully implementing change. 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 improve organizational efficiency by facilitating effective work relationships and help resolve conflict. 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 159. 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.
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 ideals can be used in leadership to develop and make the most of the strengths of others. 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.
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 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 176A. 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.
Explores symptoms of the five distinct and sequential stages of burnout; the three major areas of neglect and the importance of maintaining a healthy self-esteem when handling stress. Includes antennas 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.
Examines 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 the practical personal skills of training as an organizational resource. Includes ways people learn, identifying employee training development requirements, developing objectives, designing lesson plans, evaluation criteria, developing strategy, alternatives to training, and practicum. Audit available.

MSD 203. Emotional Intelligence in Work. 3 Credits.
Examines models, concepts and core competencies of emotional intelligence. Explores various skills to enhance emotional well-being and to build productive professional relationships in a diverse organizational climate. Includes developing strategies for managing others with various emotional competency levels. 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 or 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.

Designed as a one credit hour seminar in which the student will learn how to prepare and deliver a work-related plan. Skills learned will be directly related to these activities. Includes a visit by the instructor to the work site and a discussion of the project with the student’s supervisor as well as the student. Audit available.

MSD 298. 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 15. Conquering Math Anxiety. 1 Credit.
Introduces the concept of math identity and explores attitudes, emotions, and barriers towards math. Covers learning strategies to enhance math success, including math study skills, learning styles, test taking strategies, and math class preparation strategies.

MTH 20. Basic Math (Arithmetic). 4 Credits.
Covers fractions, decimals, percents, integers, and measurements to write, manipulate, interpret, and solve application and formula problems. Explores some measures of central tendency. A scientific calculator is required. The TI-30X II is recommended. The PCC math department recommends that students take MTH courses in consecutive terms. Prerequisite: (ABE 0782 or placement into MTH 20) and (placement into RD 80 or ESOL 250). Audit available.

MTH 25C. Fractions. 1 Credit.
Covers the use of fractions to write, manipulate, interpret and solve applications and formulas. Introduces concepts numerically, graphically, symbolically, and in oral and written form. Scientific calculator required. The PCC math department recommends that students take MTH courses in consecutive terms. Prerequisites: (ABE 0782 or placement into MTH 20) and (RD 80 or ESOL 250). Audit available.
MTH 26C. Decimals. 1 Credit.
Covers the use of decimals to write, manipulate, interpret and solve applications and
formulas. Introduces concepts numerically, graphically, symbolically, and in oral and
written form. Scientific calculator required. The PCC math department recommends
that students take MTH courses in consecutive terms. Prerequisites: (MTH 20 or
MTH 211) 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 58. Math Literacy I. 4 Credits.
Introduces pattern recognition, estimation and number sense, working with units,
spreadsheets, linear equations and inequalities. Explores how to clearly communicate
arguments supported by quantitative evidence using words, tables, graphs, and
mathematical equations. Supports collaborative learning through class
recommends that students take MTH courses in consecutive terms. Prerequisites: MTH 20, (WR 80
or ESOL 252) and (RD 80 or ESOL 250). Audit available.

MTH 60. Introductory Algebra - First Term. 4 Credits.
Introduces algebraic concepts and processes with a focus on linear equations and
inequalities in one and two variables. Emphasizes applications, graphs, formulas,
and properties of polynomial, quadratic, and rational functions. Emphasizes
applications, graph may be required. The TI-30X II is recommended. Recommended that MTH 20
be taken within the past 4 terms. The PCC math department recommends that students take MTH courses in consecutive terms. 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. Emphasizes applications, formulas, and proper mathematical notation. A scientific calculator is required. The TI-30X II is recommended. Completion of MTH 61 and MTH 62 is equivalent to MTH 60. The PCC math department recommends that students take MTH courses in consecutive terms. 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. Emphasizes functions, formulas, and proper mathematical notation. A scientific calculator is required. The TI-30X II is recommended. Completion of MTH 61 and MTH 62 is equivalent to MTH 60. The completion of MTH 62 and MTH 63 is equivalent to MTH 65. The PCC math department recommends that students take MTH courses in consecutive terms. 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. Emphasizes applications, graphs, formulas, and proper mathematical notation throughout the course. A scientific calculator may be required. The TI-30X II is recommended. Recommended that MTH 60 or MTH 62 be taken within the past 4 terms. The PCC math department recommends that students take MTH courses in consecutive terms. Prerequisites: (MTH 60 or MTH 62) and (RD 80 or ESOL 250). Audit available.

MTH 70. Review of Introductory Algebra. 4 Credits.
Reviews algebraic concepts and processes with a focus on linear equations and
inequalities in one and two variables, linear systems, properties of exponents,
polynomials, quadratic equations, and functions. Emphasizes applications, graphs,
formulas, and proper mathematical notation. A scientific calculator may be required. The TI-30X II is recommended. Recommended that MTH 63 or MTH 65 be taken within the past 4 terms. The PCC math department recommends that students take MTH courses in consecutive terms. Prerequisites: (MTH 63 or MTH 65) and (RD 80 or ESOL 250). 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 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 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, symbolically, verbally, and numerically with an emphasis on function notation. Investigates functions, equations, and graphs involving quadratic, rational, radical, and absolute value expressions. Integrates technology throughout. Graphing calculator required. TI-89 Titanium or Casio ClassPad recommended that MTH 63 or MTH 65. MTH 70 be taken within the past 4 terms. The PCC math department recommends that students take MTH courses in consecutive terms. Prerequisites: MTH 63, MTH 65 or MTH 70 and placement into WR 115. Audit available.

MTH 98. Math Literacy II. 4 Credits.
Introduces normal distribution and regression/curve fitting. Covers modeling, graphing and solving of linear and quadratic equations. Introduces problem solving with linear systems of equations. Explores how to clearly communicate sophisticated arguments supported by quantitative evidence using spreadsheets, words, tables, graphs, and mathematical equations, as appropriate. Supports collaborative learning through class group interaction. TI-83 or TI-84 calculator required. Prerequisites: MTH 58, (WR 80 or ESOL 252) and (RD 80 or ESOL 250). Audit available.

MTH 105. Math in Society. 4 Credits.
Explores concepts and applications of logic rules, basic probability and statistics as well as personal finance, financial management. Investigates problem solving techniques (both algebraic and nonalgebraic) as well as some nontraditional mathematics topics such as social choice or discrete mathematics. Integrates technology where appropriate. The PCC Mathematics Department recommends that students take MTH courses in consecutive terms. Prerequisite: MTH 95 or MTH 98 and placement into WR 121. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAO, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 111L. 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 recommended. The PCC math department recommends that students take MTH courses in consecutive terms. Recommended: MTH 95 taken within the past 4 terms. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAO, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 111H. College Algebra: Honors. 5 Credits.
An honors version of MTH 111. 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 recommended. The PCC math department recommends that students take MTH courses in consecutive terms. Recommended: MTH 95 within the past 4 terms. Prerequisite: MTH 95, RD 115, and WR 115, or equivalent placement. This course fulfills the following GE requirements: Science, Math, Computer Science/AAO, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 111L. Elementary Functions. 5 Credits.
Investigates trigonometric functions, equations and identities. Examines right
and oblique triangles, vectors, polar coordinates, parametric equations, and complex
numbers. Explores topics graphically, numerically, symbolically, and verbally.
Graphing calculator required. TI-89 Titanium or Casio ClassPad recommended. The PCC math department recommends that students take MTH courses in consecutive terms. Recommended: (MTH 111L or MTH 111B or MTH 111C) taken within the past 4 terms. Prerequisite: (MTH 111L or MTH 111B or MTH 111C) and and placement into WR 115. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AAO, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 211. Foundations of Elementary Math I. 4 Credits.
Examines the conceptual basis of K-8 mathematics. Provides opportunities to experience using manipulatives to model problem solving, numeration systems, operations, patterns and change, and number theory. Emphasizes quantitative, proportional, and algebraic reasoning. Includes content and mathematical practices based on the Common Core State Standards. 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/AAO, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.
MTH 212. Foundations of Elementary Math II. 4 Credits.
Examines the conceptual basis of K-8 mathematics. Provides opportunities to experience using manipulatives to model operations with rational numbers including fractions, decimals, percents, and integers. Explores the set of irrational numbers, the set of real numbers, proportional reasoning, and simple probability and statistics. Includes standard and mathematical practices based on the Common Core State Standards. Prerequisite: MTH 211 and its prerequisite requirements. 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.

MTH 213. Foundations of Elementary Math III. 4 Credits.
Examines the conceptual basis of K-8 mathematics. Provides opportunities to experience using manipulatives to model problem solving, explore patterns and relationships among geometric figures and develop spatial reasoning. Explores informal geometry, transformational geometry, and measurement systems. Includes content and mathematical practices based on the Common Core State Standards. Prerequisite: MTH 211. 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.

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 110B or MTH 111B and their prerequisite requirements. 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.

MTH 243. Statistics I. 5 Credits.
Introduces displaying data with graphs, numerical descriptions of data, producing data, elementary probability, probability distributions, confidence intervals and significance testing. Investigates applications from science, business, and social science perspectives. Graphing calculator with advanced statistical programs and/or computer software required; see instructor. Recommended: MTH 111. Prerequisite: MTH 95 or MTH 98, or any course for which either is a prerequisite and placement into WR 121. 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.

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 programs 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/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, 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/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, 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/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 253. Calculus III. 5 Credits.
Includes limits, continuity, derivatives and applications of derivatives. 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/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 256. 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/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

MTH 261. Applied Linear Algebra I. 5 Credits.
Survey of linear algebra with some applications. Includes linear systems, vectors, and vector spaces, including eigenspaces. 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/AOT, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS.

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. Prerequisite: MA 111. 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.

MA 117. Medical Office Administrative Procedures. 4 Credits.
Covers medical reception room techniques. Includes appointment scheduling, telephone techniques, mail handling, financial record keeping, accounts receivable and payable, insurance, office care and management, and medical records management. Prerequisite: concurrent MA 112.

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 Institute Standards (CLSI). 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. 4 Credits.
Introduces principles and applications of patient centered medical home model. Covers provider-patient relationships, and professional communication and behavior. Includes patient preparation and care, managing diagnostic testing, and immunization training and forecasting. Prerequisite: Acceptance into the Medical Assisting Program. Corequisite: MA 124.

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.
Covers concepts of disease processes as they relate to the normal physiology of the major body systems. Prerequisites: Admission to the Medical Assistant program.

MA 132. Medical Office Assistant Seminar III. 1 Credit.
Covers health care delivery systems, medical office management, interpersonal communications, and coordination of directed practice which includes a review for the national credential examination. Requires admission to the Medical Assisting program.

MA 136. Medications. 2 Credits.
Covers appropriate drug uses, effects, dangers, and precautions; routes of administration, dilutions and calculations, management and control. Reviews common prescription abbreviations, forms of medications and basic drug categories. Prerequisites: MA Program admission or instructor permission.

MA 180. Coding and Reimbursement. 2 Credits.
Introduces coding and reimbursement systems for physician offices and medical clinics.

MA 270. Clinical Practicum. 6 Credits.
Introduces basic venipuncture and skin puncture techniques as well as proper specimen-handling procedures as dictated by the Clinical and Laboratory Institute Standards (CLSI). Prepares and trains to function as an internal member of the ambulatory clinical lab care setting. Department permission required.

Medical Laboratory Technology

MLT 100. Medical Office 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 BI 55 or BI 122 or BI 233. Audit available.
MLT 105. Phlebotomy for Medical Laboratory Technicians. 1 Credit.
Introduces basic laboratory skills to collect and process high quality blood specimens for clinical laboratory analysis. Includes laboratory safety measures, professionalism, communication and interpersonal skills in the healthcare setting.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 110. Introduction to Medical Laboratory Technology. 4 Credits.
Introduces the field of clinical laboratory science. Includes an introduction to the use and care of laboratory equipment and supplies. Provides basic concepts and technical skills in the clinical laboratory field including safety, quality control, laboratory testing and communication.
Prerequisites: CH 104 or CH 221, BI 121 or BI 231 or higher, MTH 95 or higher, and WR 121 or higher.

MLT 113. Introduction to Medical Microbiology. 3 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. Develops basic skills necessary to work in the microbiology laboratory. Prerequisite: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 114. Laboratory Operations and Techniques. 4 Credits.
Introduces the field of clinical laboratory sciences, including an introduction to laboratory organization, laboratory safety, quality assurance and laboratory regulation. Reviews utilization of basic laboratory equipment, point of care testing and laboratory information system. Covers professionalism in the healthcare setting. Includes documentation and communication according to laboratory protocols.
Prerequisite: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 115. Clinical Laboratory Mathematics. 1 Credit.
Provides a review of arithmetic, algebra, scientific notation, rounding and figure significance, measurement systems and conversions, solutions and concentrations, dilutions, titers and other mathematical calculations commonly used in the clinical laboratory setting.
Prerequisite: Acceptance into the Clinical Laboratory Technology Program. Audit available.

MLT 120. Urinalysis. 2 Credits.
Reviews anatomy and physiology associated with production of urine. Introduces urine composition, urine analysis testing principles and procedures, and the clinical correlation of results with disease conditions.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 222. Clinical Chemistry I. 4 Credits.
Introduces theory, general laboratory principles, methodologies, instrumentation and practical concepts associated with testing procedures used in the clinical chemistry laboratory. Includes important characteristics and clinical significance of carbohydrates, proteins, lipids, electrolytes, non-protein nitrogenous waste (creatinine, BUN and uric acid) and cardiac markers.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 225. Clinical Chemistry II. 4 Credits.
Introduces pathophysiology, diagnosis, and monitoring of selected human diseases on an organ system basis. Includes enzymology, acid-base balance, endocrinology, liver function, pancreatic function, toxicology and therapeutic drug monitoring.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 224. Audit available.

MLT 230. Body Fluids. 2 Credits.
Introduces the composition, testing procedures, and the clinical correlation of results for cerebrospinal, synovial, pleural, pericardial, peritoneal, seminal, and amniotic fluids.
Prerequisite: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 241. Immunohematology I. 3 Credits.
Introduces basic immunology and the various antigen-antibody reactions with emphasis on agglutination reactions. Develops knowledge and skills in ABO and Rh blood group testing.
Prerequisite: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 242. Immunohematology II. 4 Credits.
Introduces blood group systems other than ABO and Rh, pre- and post-transfusion testing methods, hemolytic disease of the newborn phenomenon, blood components, anticoagulants, and transfusion reactions.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 241. Audit available.

MLT 251. Hematology I. 4 Credits.
Introduces hematology, the origin and maturation of the various types of blood cell lines with emphasis on the red and white blood cells. Includes study and analysis of hemoglobin, hematocrit, erythrocytic sedimentation rate and blood cell counts. Emphasizes cell identification, cell differentiation and blood cell morphology. Presents anemias and their classifications based on red blood cell morphology and etiology.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 252. Hematology II. 4 Credits.
Introduces human hematological disorders associated with white cell abnormalities and anemias. Emphasizes cell identification, cell differentiation and cell morphology evaluation procedures. Allows for practice of hematology analytical skills and correlation of laboratory findings with patient symptoms and clinical history. Presents principles of automated instrumentation and application of flow cytometry to clinical hematology.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 251. Audit available.

MLT 253. Hemostasis. 2 Credits.
Provides an overview of theory and practical application of hemostasis (coagulation), as it relates to the medical laboratory.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 241. Audit available.

MLT 261. Clinical Bacteriology I. 3 Credits.
Introduces basic practices and principles of clinical bacteriology, focusing on pathogenic bacteria encountered in the blood, central nervous system, and gastrointestinal tract. Includes application of common algorithms for identification of clinically significant pathogens.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 261. Audit available.

MLT 262. Clinical Bacteriology II. 4 Credits.
Covers practices and principles of clinical bacteriology, focusing on pathogenic bacteria encountered in the gastrointestinal and respiratory tracts, soft and solid tissues, and infections of special patient populations. Includes application of common algorithms for identification of clinically significant pathogens.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 262. Audit available.

MLT 265. Clinical Mycology and Parasitology. 3 Credits.
Introduces the fields of medical mycology and medical parasitology. Focuses on the clinical significant fungi and covers specimen processing and diagnostic procedures for the cultivation and identification of fungal pathogens. Identifies characteristics, life cycles, pathogenicity and testing methods for selected relevant parasites.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 271. Clinical Laboratory Practice I. 2 Credits.
Provides an introduction to human immunity. Presents clinical laboratory diagnosis of infectious disease utilizing serological test methods.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 272. Clinical Laboratory Practice II. 2 Credits.
Provides a simulated clinical laboratory setting to become familiar with the daily organization and operations in the departments of coagulation, body fluids, advanced level bloodbank, advanced level microbiology, and advanced level laboratory personnel supervision.
Prerequisite: Acceptance into the second year of the MLT Program. Audit available.

MLT 273. Clinical Laboratory Practice IV. 9 Credits.
Provides practicum experience in various clinical sites to become familiar with the organization and operation of the clinical laboratory setting. Provides an opportunity to gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community, and provides opportunity to gain further experience in dealing with patients and in performing procedures required of a laboratory technician. The clinical experience will be done under the direct supervision of assigned trainer(s) at the clinical site.
Prerequisite: Acceptance into the second year of the MLT Program and MLT 272. Audit available.

MLT 274. Clinical Laboratory Practice IV. 9 Credits.
Provides practicum experience in various clinical sites to refine skills necessary for the organization and operation of the clinical laboratory setting. Provides an opportunity to gain insight into how the clinical laboratory practitioner relates to the entire medical team and to the community, and provides opportunity to gain further experience in dealing with patients and in performing procedures required of a laboratory technician. The clinical experience will be conducted under progressively less laboratory personnel supervision.
Prerequisite: Acceptance into the second year of the MLT Program and MLT 273. Audit available.

MLT 282. Clinical Seminar I. 2 Credits.
Introduces new and advanced concepts in clinical laboratory medicine and healthcare profession. Explores techniques for writing standard operational procedures. Provides opportunity for sharing and discussing practicum experiences. Covers professionalism, resume writing and job application techniques.
Prerequisites: Acceptance into the Medical Laboratory Technology Program. Audit available.

MLT 283. Clinical Seminar II. 2 Credits.
Provides opportunity for sharing and discussing continuing education experiences and to prepare for certification exams.
Prerequisites: Acceptance into the Medical Laboratory Technology Program and MLT 282. Audit available.
Medical Professions

MP 108. Healthcare Career Essentials. 3 Credits.
Introduces skills required to become a competent and productive health care professional including effective communication, teamwork, emotional intelligence and professionalism. Explores various career pathways in today’s healthcare industry focusing on educational and licensing requirements, professional responsibilities, and the workplace environment. Introduces job searching, resume writing, and interviewing techniques. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 pharmacology principles and medicine classifications. Covers pharmacologic terminology and concepts such as drug categories, mechanism of drug action, drug forms, 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 122 or BI 233). 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. Overviews available hazard information and how to obtain it. Covers personal safety and related equipment. Audit available.

MT 90. Basic Electronics. 3 Credits.
Includes Ohm’s Law, Kirchhoff’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 process 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 volatile cells, and MOSFET transistors. Includes electronic materials fundamentals of electricity, conductivity and semiconductor. Audit available.

MT 103. Introduction to Micro and Nano Processing. 1 Credit.
Examines commonly made semiconductor devices, including diodes, solar volatile cells, and MOSFET transistors. Includes electronic materials fundamentals of electricity, conductivity and semiconductor. Audit available.

MT 104. Introduction to Solar Voltacic 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 pure single crystal silicon wafers and the processes used to form the solar devices on top of these substrates. Audit available.

MT 108. Statistics for Process Control. 2 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: MTH60, WR115. 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.
Covers Ohm’s Law, Kirchhoff’s Voltage and Current Law, Superposition, Thevenin’s Theorem, and F-C circuits. Includes measurement, basic circuit elements, use of electronic test equipment and proper documentation techniques. Prerequisites: WR 115, and placement into 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.
Overviews discrete semiconductor devices - diodes, BJTs, and FETs - and operational amplifiers. DC models as well as frequency response, bandwidth/rise time relationships, and performance criteria are emphasized. Labs emphasize circuit construction and include simulation of amplifier circuits. Prerequisite: MT 112. Audit available.

MT 121. Digital Systems I. 3 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.

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, architecture, execution cycle, data file type and management, variable monitoring, and basic programming instructions. Recommended: MT121, MT122 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 MT associated industries of solar, microelectronics and automated manufacturing. Prerequisite/concurrent: MT 101, 102, 103 or 104.

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/sort. Prerequisites: MT 102, MT 103 or MT 104, MT 240, COMM 120 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 final vacuum trouble-shooting. Prerequisites: MT 101, MT 102, (MT 103 or MT 104), CH 100 or higher, WR 121, or instructor permission. Audit available.
MT 224. Process Equipment I. 3 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. Prerequisites: MT 224 or concurrent, and MT 223 or MT 240).

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, and (CS 162 or MT 223 and MT 240).

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 112, MT 223, 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 target audience, utilizing information architecture and user experience design principles, evaluating projects to determine deliverables and resource needs. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/ 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 MM110, MM120, and MM130. Prerequisite/concurrent: MM 130 or instructor permission. Audit available.

MM 141. Incorporating Multimedia Elements in Presentation Software. 2 Credits.
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 142. Introduction to Augmented Reality. 1 Credit.
Explores and defines the technology and creation of augmented reality. Examines uses and trends using this technology. Includes the creation of simple projects that demonstrate the production and use of augmented reality. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 practices used in finding and obtaining employment in the multimedia industry. Prerequisite/concurrent: MM 130 and MM 140 or instructor permission. Audit available.

MM 210. Audio Technician I - Intro. 4 Credits.
Introduces the concepts and skills of audio mixing and recording for live events and video projects. Includes critical listening, the physics of sound and microphone design, the principles of signal flow, mixing, recording, and monitoring, and hands-on practices and assessments of contemporary mixing, sound reinforcement, and two-channel recording. Prerequisites: MM 225 and WR 227, or MM 211, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 211. Audio Technician II - Multitrack/Post. 4 Credits.
Continues to develop skills in audio production for multi-track recordings of live events as well as field and sound stage-based projects. Applies industry-standard audio software and hardware for audio editing, mixing, and sweetening. Prerequisite: MM 210, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 212. Audio Technician III - Project Management. 4 Credits.
Introduces project management skills including: concepts and applications of ADR, sound design, surround sound, mastering, and distribution. Includes scheduling, budgeting, working with video personnel, actors, composers, and other resources. Prerequisites: MM 211, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 213. Audio Technician IV - Capstone Project. 4 Credits.
Provides the opportunity to develop a personal capstone project that demonstrates mastery of Audio Technician Track concepts, applications, and skills, including project management, field audio, post production audio, sweetening, sound design, mastering, and distribution. Prerequisite: MM 212. Audit available.

MM 220. Multimedia Design II. 3 Credits.
Emphasizes design concepts including layout, typography, color theory, and industrial 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 221. Game Level Design. 3 Credits.
Analyzes levels used in modern video games. Integrates both functional and aesthetic level design, level pacing and flow, player goals, and fun factors. Prerequisites: MM 121 or instructor permission, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 225. Game Art Pipeline. 3 Credits.
Introduces processes and methods necessary for developing game-specific content for contemporary game engines and real-time rendering environments. Focuses on team-based efficient production management and pipeline. Prerequisites: MM 253, MM 255 or instructor permission, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Prerequisite/concurrent: 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.
Provides an introduction to creating, editing, and taking apart 3D models. Develops foundational skills to work with, and navigate the digital 3D modeling workspace to create 3D objects. Examines basic elements of the 3D development of modeling, texturing, lighting, animating, and rendering. Prerequisite: MM 130, MM 140, or instructor permission, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 233. 3D Character Modeling and Animation. 3 Credits.
Introduces high-end digital sculpting and painting techniques used to create models, normal maps, and layered polygon textures. Develops skills using current industry tools and techniques utilized in professional game asset creation. Prerequisites: MM 253, MM 255 or instructor permission, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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. 4 Credits.
Explores the post-production process for non-linear editing of digital video for use in various multimedia applications. Focuses on industry standard editing software to develop the foundation grammar of editing including continuity and montage principles. Prerequisite: MM 130 or instructor permission. Audit available.
MM 236. 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 playback on both PC and Macintosh and publically available user-generated content (UGC) hosting services to be tested for performance on Macintosh and Windows computers using various browsers and players. Prerequisites: MM 235; CAS 111D or CAS 206; or instructor permission. Audit available.

MM 237. Video Compositing and Effects. 4 Credits. Introduces the creation of motion graphics using industry standard software. Illustrates the basic concepts of motion graphics, as well as the functions and capabilities of the software tools including their extensive compositing, keying, animation, and special effects capabilities. Prerequisites: MM 230, MM 235. Audit available.

MM 238. Creating Professional DVD-Video. 4 Credits. Introduces creation of custom DVD-Video using professional level authoring software. Integrates video with audio, graphics, and other assets. Develops custom navigation, menus, chapters, and interactivity. Encodes uncompressed audio into highly compressed Dolby digital AC-3 streams, and incorporates it into the DVD authoring software. Prerequisite: MM 140 and MM 235, or instructor permission. Audit available.

MM 239. Digital Video Edit/Post Production II. 4 Credits. Continues to develop and explore post-production design and delivery of digital video and audio for multimedia projects and television. Continues to build upon the basic techniques of video editing, color correction, audio development, media compression formats and codecs for video delivery using industry standard software. Analyzes, evaluates, and critiques existing video projects. Prerequisite: MM 235. Audit available.

MM 240. Multimedia Authoring II-Scripting. 4 Credits. Covers industry standard web application tools to author interactive projects. Covers essential and foundational authoring languages, concepts and practices. Includes assembly of digital media elements, made interactive through authoring, and then tested for function, design, usability, and bugs. Prerequisites: MM 140, MM 231; or instructor permission. Audit available.

MM 241. Multimedia Authoring III - Scripting. 4 Credits. Continues to develop the essential and foundational authoring languages, concepts and practices. Includes advanced assembly of digital media elements will be assembled, made interactive through authoring, for web or mobile phone delivery and then tested for function, design, usability, and bugs. Prerequisite: MM 240; or instructor permission. Audit available.

MM 244. Creating Interactive Web Pages. 3 Credits. Covers integrating multimedia content on websites using industry standard web development tools such as HTML5, CSS, and Content Management Systems. Explores the incorporation of multimedia elements on websites to optimize delivery of content on a variety of devices. Prerequisites: CAS 111D or CAS 206, and MM 140 or instructor permission. Audit available.

MM 245. Internet Delivery Methods. 3 Credits. Examines methods and strategies to optimize and expand the delivery of still graphics, animations, audio, and video streaming to various devices. Includes evaluation of media performance, codec efficiency, image quality and cross-platform functionality, interactivity, accessibility, and digital design standards. Recommended: CAS 112D and CAS 113. Prerequisites: MM 230 and CAS 111D or CAS 206 or instructor permission. Audit available.

MM 246. Post-Production Sound for Video. 2 Credits. Introduces the practice of sound editing for video projects. Examines multiple methods and workflows including: synchronization of sound with picture, modification to maximize intelligibility, dialog replacement, the creation, collection and use of sound effects and music, mixing, and conforming sound to distribution standards. Prerequisites: MM 235 and MM 260. Audit available.

MM 247. Field Sound for Video. 2 Credits. Provides overview, exploration and practice of field sound recording for video projects. Examines multiple concepts, methods and techniques including preproduction, microphone use, signal routing, mixing and improving sound recording in challenging acoustical environments. Prerequisites: MM 235 and MM 260. Audit available.

MM 250. Advanced Multimedia Project Development I. 3 Credits. Explores the connection between creative and technical skills required to develop digital multimedia projects. Covers planning, producing and implementation of interactive projects using industry standard software. Prerequisites: MM 235 and MM 239. Audit available.

MM 251. Advanced Multimedia Project Development II. 3 Credits. Continues to develop digital multimedia skills used in planning, producing and implementing interactive projects using industry standard software. Prerequisites: MM 250. Audit available.

MM 252. Advanced Multimedia Project Development III. 3 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 developing skills to produce 3D models through hands-on exercise and assignments. Explores relevant modeling toolssets, advanced modeling theory, and a variety of modeling approaches and theory. Includes intermediate rendering techniques. Prerequisites: MM 232, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 254. Character Rigging and Animation. 3 Credits. Explores 3D character rigging and animation using industry standard 3D rigging and animation software. Covers the creation of a professional bipedal character rig, character animation and lip-syncing facial animation. Prerequisites: MM 232, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MM 255. 3D Lighting and Texturing. 3 Credits. Expands upon lighting techniques with an in-depth focus on the technical aspects of both high-end lighting and shadows. Covers UV unwrapping and layout skills, and advanced graphic tool techniques in order to create professional quality textures. Ritches skills in lighting and authoring animation, and then tests for function, design, usability, and bugs. Prerequisite: MM 235 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 concepts and 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 Compositing 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. Audit available.

MM 260. Video Production I. 4 Credits. Introduces digital video production, with a focus on the fundamentals of project planning, basic camera functions, shooting techniques, lighting principles, and audio recording fundamentals. Includes preproduction issues, production terminology, and evaluation of industry etiquette. Prerequisites: MM 130 and MM 235. 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 250 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 management issues, the small-crowd field production model, interviewing techniques, and further development of camera, lighting, audio, and editing skills. Prerequisites: MM 235, MM 260, MM 261, or instructor permission. Audit available.

MM 263. Cinematography/Lighting. 3 Credits. Explores the essential skills in lighting and camerawork for field and studio video production. Explores all light fixtures, safety, theory and techniques. Covers camerawork, 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 studio 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 266. Special Effects I- Green Screen. 4 Credits. Introduces the processes of green screen shooting, development of natural and virtual background environments, and compositing. Includes planning, setup and production of the shoot, and post-production processes. Prerequisites: MM 235, MM 260 or instructor permission, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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. Prerequisite: 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. Prerequisite/concurrent: WR 115 or equivalent placement test scores. 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.

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/AATOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

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/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. Focuses on harmonic analysis and figured bass notation. Includes composition. Part of one of three-term sequence. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Covers the development of skills relevant to the notation, performance and aural recognition of music. Includes meter, rhythm, diatonic melodies, triads, solfeggio, intervals, and harmonic function. Part one of three term sequence. Corequisite: MUS 111. Audit available.

MUS 112. Music Theory I (part two), 3 Credits.
Continues work from MUS 111. Focuses on four-part harmony and common practice period voice leading. Covers figured bass realization, harmonic analysis and written composition. Part two of three-term sequence. Prerequisite: MUS 111 and its prerequisite requirements. 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.

MUS 113C. Music Theory I: Sight Singing and Ear Training (part three). 3 Credits.
Continues work from MUS 112. Introduction to chromatic harmony as exhibited through tonization and harmonic modulation. Covers melodic structure and basic Schenkerian reduction technique. Also includes large-scale form and analysis and written composition. Meets arts and humanities sequence requirement for Associated Degree. Part three of three-term sequence. Prerequisite: MUS 112 or equivalent placement test scores. 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.

MUS 113D. Music Theory I: Sight Singing and Ear Training (part four). 3 Credits.
Continues work from MUS 113C.4 Sports Business and Industry. 3 Credits.
Focuses on sports business and industry. Includes the components of sports business and industry. Includes team building, communication skills and project development. Prerequisites: MUS 230, 231, 235, 236, 240, 241, 245 or instructor permission. Audit available.

MUS 115A. 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 115B. 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 115C. 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 116A. 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 115A. Audit available.

MUS 116B. 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 115B. Audit available.

MUS 116D. 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 115C. Audit available.

MUS 116E. 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 115D. Audit available.

MUS 116F. 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 115E. Audit available.

MUS 170. Music Technology: Beats andBasics. 3 Credits.
Introduces music technology for musicians and music majors. Covers software-based recording with a focus on the construction of beats and melodies. Presents a foundation in MIDI, sequencing, signal processing, and applied production. Introduces history of electronic music. Recommended basic knowledge of computers and MUS 110. 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.

MUS 111. Music Theory I (part three). 3 Credits.
Continues work from MUS 112. Introduction to chromatic harmony as exhibited through tonization and harmonic modulation. Covers melodic structure and basic Schenkerian reduction technique. Also includes large-scale form and analysis and written composition. Meets arts and humanities sequence requirement for Associated Degree. Part three of three-term sequence. Prerequisite: MUS 112 and its prerequisite requirements. 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.

MUS 113C. Music Theory I: Sight Singing and Ear Training (part three). 1 Credit.
Continues development of skills learned in MUS 112C. Includes two-part melodic and rhythmic notation. Introduces secondary function and diatonic modulation. Part three of three-term sequence. Corequisite: MUS 113. Prerequisite: MUS 112C. 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 119. 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 171. Music Technology: Record and Mix. 3 Credits.
Develops digital music technology skills for musicians and music majors. Covers software-based recording, synthesis, beats, and core mixing. Presents foundations in Digital Audio Workstations, MIDI, audio recording, sequencing, effects, and applied production. Introduces music industry practices and trends. Prerequisite: MUS 170. Audit available.

MUS 172. Music Technology: Record, Remix and DJ. 3 Credits.
Continues development of digital music technology skills for musicians and music majors. Covers live performance applications, mash-ups, visual object languages, interactive media, and artist development and production. Includes industry and independent artist marketing practices. Prerequisite: MUS 171. 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.
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 191E. 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 192. 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 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. 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 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 is available to all students. Prerequisite: MUS 192P. 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 195B. 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 195C. 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 195D. Audit available.

MUS 195F. 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. 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/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. 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/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 early, swing, and significant artists. Prerequisites: concurrent: WR 115 or equivalent placement test scores. 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, 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 historic development and the musical and textural characteristics of American folk music, from its Anglo-Celtic, Hispanic, African and Native American roots to the present, including country music, bluegrass, blues, border music, religious and other ethnic music. Discusses folk revivals and the significance of songs in terms of the social norms of the time, including the interaction of folk music with popular music. Presented using a multimedia format. Prerequisite/concurrent: WR 115 or equivalent placement test scores. Audit available. 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 208. African-American Music. 3 Credits.
Traces the spiritual and all of its counterparts to gospel music back to its African beginnings. Includes certain musical aspects of various African, Caribbean and South American cultures. Examines the progression of African-American music to the blues. Includes the elements of the blues and the various historical and geographical areas in which it has developed. Study how the blues has inspired and constructed the format of today's music. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 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 and geographical areas in which it has developed. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

MUS 210. African-American Music. 3 Credits.
Examines the history and development of jazz, including the progression of jazz from the blues to the modern jazz era. Includes the various types of jazz and their influence on music today. Prerequisites: 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 211A. 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 211. Audit available.

MUS 211B. Music Theory II: Keyboard Harmony. 1 Credit.
Keyboard performance practice of simple keyboard skills (scales, cadences, melody harmonization, simple accompanying patterns and theory 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 211. 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 and Aural Skills. 1 Credit.
Continues development of piano keyboard skills (scales, cadences, melody harmonization, accompaniment patterns and transposition) as they apply to principles studied in Music Theory II. Continues development of aural skills. Prerequisite: MUS 212B. Corequisite: MUS 213A. 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.

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 is required. Prerequisite: MUS 220A. 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 other 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 223. 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 music practices of 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, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

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.

MUS 291. Guitarology: History, Players and Innovators. 4 Credits.
Covers the history of the guitar and associated instruments from neolithic and classical civilizations to current times. Introduces major figures in the development of the instrument including composers, luthiers and performers. Includes cross-cultural appeal of the instrument and how it has been adapted and distributed globally through media with a focus on the music of the 20th and 21st centuries. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 128A. 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 128B. 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 basic piano technique with correct observance of pitch, clef, meter, phrasing, and interpretation in a contemporary style. This is the first course in a three-course sequence. Audit available.

MUC 140B. Group Piano II. 2 Credits.
Covers beginner to intermediate instruction for piano. Develops practice skills, sight-reading, and technical form. Covers music fundamentals, harmony, notation, improvisation, and stylistic nuances. This is the second course in a three-course sequence. Prerequisite: MUC 140A or instructor permission. Audit available.

MUC 140C. Group Piano III. 2 Credits.
Develops piano proficiency skills and focuses on technique, phrasing and cadences, sight-reading and performance, harmonization, accompanying, and transposition. This is the third course in a three-course sequence. Prerequisite: MUC 140B or instructor permission. 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 movable 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: MUC 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. 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 II. 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 material. 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 ramps. 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 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 ramps. 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 ramps. Focuses on harmonic construction of all styles of jazz and ear training. By the end of the sequence, students match solo against song form. Audit available.

MUC 164. 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 165. 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.
MUC 166. Songwriting and Music Publishing. 2 Credits.
Covers the basic forms of popular music songwriting. Includes the opportunity to create songs, individually and in collaboration with others. Includes the business aspects of music publishing and how they affect the songwriter. May be taken three times for credit. Audit available.

MUC 167. The Music Business: Career Opportunities and Self Defense. 2 Credits.
Covers what you need to know to pursue a career in music and the music business. Audit available.

MUC 200A. Composing and Arranging I: Principles and Techniques. 3 Credits.
Introduces music composition and arranging with a 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 both original and arranged works. This is the first course in a three-course sequence. Prerequisites: MUC 103, MUS 113, or instructor approval. Audit available.

MUC 200B. Composing and Arranging II: Electronic Music Composition. 3 Credits.
Covers electronic music composition. Includes intermediate to advanced applications in sequencer and scoring software; recording techniques as applied to film and multimedia; and the development of a portfolio of original works. This is the second course in a three-course sequence. Prerequisite: MUC 200A. Audit available.

MUC 200C. Composition and Arranging III: Electronic Media Composition. 3 Credits.
Covers advanced electronic music composition. Includes intermediate to advanced applications in sequencing and scoring software; recording techniques as applied to film and multimedia, and composition projects with the goal of creating a portfolio of original works. This is the third course in a three-course sequence. Prerequisite: MUC 200B. Audit available.

MUC 201. Analog Modular Synthesis. 3 Credits.
Introduces theories and techniques for electronic music creation with analog and modular synthesizers. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test score or instructor permission. Audit available.

MUC 202A. Ensemble I: Intro to Ensemble. 2 Credits.
Involves rehearsal, rehearsals, and performances of twentieth and twenty-first century repertoire. Includes important works of the last century from a performance perspective and a deeper understanding of current trends in contemporary music. Develops skills in improvisation, analysis and interpretation, and communication skills between members. Open to performers of any instrument or voice type. Audit available.

MUC 202B. Ensemble II: Jazz Ensemble. 2 Credits.
Introduces a solid grounding in the style, performance, and theory of jazz in the 20th century. Covers a variety of jazz styles including but not limited to Latin, blues, ballads, rock and roll, and intersections with classical music traditions. Covers improvisation and techniques for performing in both small and large group settings. Audit available.

MUC 202C. Ensemble III: Multimedia Ensemble. 2 Credits.
Creates an experience of a progressive, flexible multimedia ensemble beyond the boundaries of a traditional ensemble class. Incorporates elements of other genres of artistic expression: dance, visual art, poetry, MIDI, and video. Involves collaborations with student composers for the purpose of premiering new works. Audit available.

MUC 222. Introduction to Recording Technologies. 2 Credits.
Course familiarizes students with the terminology, equipment and basics used in the recording industry. Prepares students for the technical requirements of the Recording Technologies courses. Audit available.

MUC 223. Studio Recording Technology I. 3 Credits.
Fundamental skills in audio engineering including a mixture of theory and practical application of current recording technology. Includes fundamental acoustic, microphone placement, editing, multi-track recording, mix-down, signal processing, MIDI, and time code synchronization. Focuses on fundamentals, music recording and sound tracks for visual media. Audit available.

MUC 224. Studio Recording Technology II. 3 Credits.
Fundamental skills in audio engineering including a mixture of theory and practical application of current recording technology. Includes fundamental acoustic, microphone placement, editing, multi-track recording, mix-down, signal processing, MIDI, and time code synchronization. Focuses on fundamentals, music recording and sound tracks for visual media. Audit available.

MUC 225. Studio Recording Technology III. 3 Credits.
Fundamental skills in audio engineering including a mixture of theory and practical application of current recording technology. Includes fundamental acoustic, microphone placement, editing, multi-track recording, mix-down, signal processing, MIDI, and time code synchronization. Focuses on fundamentals, music recording and sound tracks for visual media. Audit available.

MUC 226. Digital Recording 1. 3 Credits.
Covers digital technology used in the recording industry. Principle studies are A/D-D/A conversions, graphic editing, plug in effects programming and data handling. Prerequisites: MUC 225. Audit available.

MUC 227. Digital Recording 2. 3 Credits.
Second course in a three part series. Focuses on mixing, automation and synchronization. Both graphic and console methods will be practiced. Lectures focus on theory, musical qualities and functions of both. Prerequisite: MUC 226. Audit available.

MUC 228. Digital Recording 3. 3 Credits.
Third part of a three part series. Focuses on competencies in varied applications such as audio for video and picture. Lectures focus on musical requirements, theory, and practical approaches to field related tasks. Labs will consist of practical applications of all previously learned artistic and command skills. Prerequisite: MUC 227. Audit available.

MUC 234. Income Tax Preparation for Musicians. 1 Credit.
Prepare federal and state individual returns, and introduces partnership and corporate taxation. Includes basics of record-keeping and financial planning. Audit available.

MUC 236. Studio Recording Technology IV. 3 Credits.
Covers intermediate to advanced skills in audio engineering including a mixture of theory and practical application of current recording technology. Focuses on technology as a tool for creativity. Includes digital audio, mixing on DAWs, signal routing, time correction, troubleshooting, session organizing and professional skills. This is the fourth course in a six-course sequence. Prerequisites: MUC 225. Audit available.

MUC 237. Studio Recording Technology V. 3 Credits.
Covers intermediate to advanced skills in audio engineering including a mixture of theory and practical application of current recording technology. Focuses on technology as a tool for creativity. Includes digital audio, DAW anatomy, signal routing, DAW tracking, critical listening, and pitch correction. This is the fifth course in a six-course sequence. Prerequisite: MUC 236. Audit available.

MUC 238. Studio Recording Technology VI. 3 Credits.
Covers advanced skills in audio engineering including a mixture of theory and practical application of current recording technology. Incorporates technology as an artistic tool to overcome creative barriers. Includes session management, critical listening, mixing, professional skills, and projects. This is the sixth course in a six-course sequence. Prerequisite: MUC 237. Audit available.

MUC 270. Audio Programming I: Introduction to Max/MSP. 3 Credits.
Introduces visual programming language Max/MSP and the practice of creative coding for music and sound design. Recommended: basic familiarity with computers and digital audio workstations. Prerequisites: Placement into WR 90, RD 90 and MTH 20 or higher.

MUC 271. Audio Programming II: Intermediate Max/MSP. 3 Credits.
Provides intermediate experience with the visual programming language Max/ MSP and the practice of creative coding for music and sound design. Prerequisite: MUC 270.

MUC 280A. Cooperative Education: Vocational Music. 1-3 Credit.
Develops individual music performance, writing or recording skills in a department approved work setting. Department permission required. Corequisite: MUS 280B. Audit available.

National Accredited Programs

NCMA 123. Clinical Practicum II. 5 Credits.
Provides opportunities to practice direct care to patients and support office functions in a medical setting. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores and NCMA 113. Prerequisite/concurrent: PSY 101.

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 nursing students. Populations studied in the course 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 processes 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. Prerequisite/concurrent: (NRS 230 or NRS 231) and (NRS 232 or NRS 233).

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. Prerequisite/concurrent: (NRS 230 or NUR 231) and (NRS 232 or NRS 233).

NRS 221. Chronic II. 9 Credits.
This course builds on foundations of nursing in Chronic Illness I. Chronic Illness II expands the student’s knowledge related to family care giving, symptom management and end of life concepts. These concepts are a major focus and basis for nursing judgment 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. Examples include patients with chronic mental illness and addictions as well as other chronic conditions and disabilities affecting functional status and family relationships. The course includes classroom and clinical learning experiences. Prerequisite: Completion of first year Nursing courses.

NRS 222. Acute Care II. 9 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. Examples 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 formalize the clinical judgments, knowledge and skills necessary in safe, registered nurse practice. Faculty/Clinical Teaching Association/Student Triad Model provides a context that allows the student to experience the nursing work world in a selected setting, balancing demands of job and lifelong learner. Analysis and reflection throughout the clinical experience provide the student with evaluate criteria against which they can judge their own performance and develop a practice framework. Includes seminar, self-directed study and clinical experience. Prerequisite: NRS 222.

NRS 230. Clinical Pharmacology I. 3 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, nonopioid analgesics, and antibiotics, as well as additional classes of drugs. Students will learn to make selected clinical decisions in the context of nursing regarding 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 230.

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 pathophysiological processes, teaching persons from diverse populations regarding pathophysiological processes, and communicating with other health professionals regarding pathophysiological processes. The course addresses additional pathophysiological processes not contained in Pathophysiological Processes I. Prerequisite: NRS 232.

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. Audit available.

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 representatives(s), if appropriate. Approval 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, transcribing, and writing memos, letters and email. Emphasis: punctuation, capitalization, spelling, grammar, and word use. 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 change orders, records transfer, various filing systems, and an overall view of the role of records management in business including electronic and image records. Recommended: RD 115; WR 115; and 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 specialist. Includes developing an individual business plan, creating a marketing plan incorporating a social media marketing strategy, establishing a fee rate range, identifying software requirements, planning a company website, legal requirements, insurance issues, negotiating contracts, 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, operating your home office, 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. 1-4 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. Audit available.

Ophthalmic Medical Technology

OMT 102. Ocular Disease. 2 Credits.
Studies major ocular disorders and related structures integrated with symptomology 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 for treatment. Prerequisites: MP 135, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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 and applanation 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. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

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. 6 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.
Presents basic optical principles and the human eye from both theoretical and practical standpoints. Explores prisms, basic dispensing, techniques for measuring types of lenses, use of alignment clock, use and maintenance of ophthalmic instruments and equipment. Audit available.

OMT 146. Clinical Optics 2. 2 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 147. Clinical Optics 3. 2 Credits.
Covers theories of visual perception. Introduces basic and advanced visual aids and their application to patients with various forms of low vision. Explores concepts of depth perception and color vision. Introduces concepts of retinoscopy and refractometry. Fitting, care and patient instruction of contact lens will be mastered. Prerequisite: OMT 146.

OMT 163. Ocular Anatomy and Physiology. 2 Credits.
Introduces the structure and function of the human visual system. Covers the anatomy and physiology of the eyeball, orbit, and ocular adnexa with an emphasis on ocular terminology. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

OMT 206. Diagnostic Procedures I. 4 Credits.
Introduces fundamentals of diagnostic testing and techniques including: applanation tonometry, slit lamp microscopy, Goldmann and automated perimetry, ocular motility and advanced keratometry. Emphasizes building clinical skills.

OMT 207. Diagnostic Procedures II. 4 Credits.
Presents principles of advanced visual field examination with emphasis on Goldmann Perimetry. Covers principles and techniques of exophthalmometry, color and function tests, ocular motility and echography. Emphasizes skill development.

OMT 208. Ocular Motility. 2 Credits.
Explores ocular motility, associated testing and measurements required for evaluation. Explores understanding the presentation, characteristics and history of the strabismus patient. Discusses amblyopia treatment and therapies. Audit available.

OMT 209. Surgical Assisting Procedures. 4 Credits.
Addresses the technician's role in assisting in minor office surgeries, hospital-based OR or ASC surgery and laser procedures. Include aseptic technique, scrubbing, gowning and gloving, sterilization of instruments, proper disposal of supplies/medications and regulations pertaining to surgical centers. Covers intraocular injections and refractive surgery. Audit available.

OMT 210. Advanced Diagnostics. 4 Credits.
Focuses on more advanced diagnostic procedures including electrophysiological test, direct ophthalmoscopy, advanced color testing, advanced motility, tonometry and retinoscopy. Addresses microbiology, including specimen collection. Provides overall review in preparation for national certification examination. Audit available.

OMT 222. Practicum Second Year. 4 Credits.
Provides clinical education experience in local ophthalmic practices and health care facilities under the supervision of faculty 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 twice for credit. Corequisite: OMT 232.

OMT 231. Seminar I. 1 Credit.
Explores the practicum experience through discussions and includes concepts of medical ethics review, patient confidentiality, professionalism and communication skills. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Corequisite: OMT 121.

OMT 232. Seminar II. 2 Credits.
Reviews major ophthalmic subject areas through guest speakers and field trips. Explores 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. Corequisite: OMT 222.

OMT 250. Ophthalmic Imaging. 3 Credits.
Introduces the common forms of ophthalmic imaging (CT, MRI, CCT, HRT, and wave front), ophthalmic photography (external and fundus), and fluorescein angiography. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

Paralegal

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 107. Techniques of Interview. 3 Credits.
Students study and conduct simulated interviews. Prerequisite: WR 121. Prerequisite/concurrent: PL 101. Audit available.

PL 109. Estate Planning. 3 Credits.
Covers approaches to estate planning, including wills, trusts, shared ownership, gifts and life insurance. Includes objectives for estate planning, probate and the estate, and structures and results of different estate plans. Prerequisite/concurrent: PL 101. Audit available.
PL 111. Probate Practice. 3 Credits.
Covers preparation and filing of necessary papers used to administer an estate under Oregon state law. Audit available.

PL 113. Income Tax Law. 3 Credits.
Focuses on three key aspects of income taxation (principally federal income taxation). Includes basic concepts of income taxation, and understand the interaction of various components involved in the determination of the income tax. Covers the audit process, including how a taxpayer may appeal an audit decision and how an appeal may reach various courts. Learn how research differs from other legal research and will understand the implications of various types of authorities regarding tax law and procedure. Prerequisite: PL 101. Audit available.

PL 116. Real Property Law I. 3 Credits.
Covers introductory principles and procedures in real and personal property law including possessory interests, estates, deeds, contracts, servitudes, leases, title issues and real estate transactions. Prerequisite/concurrent: PL 101. Audit available.

PL 124. Law Office Management. 3 Credits.
Covers law office organization and management, personnel management, basic accounting, procedural and automated systems, and other aspects of law office management. Prerequisite/concurrent: PL 101. Audit available.

PL 130. Legal Software. 3 Credits.
Provides training in a variety of specialized legal software applications through lecture, discussing and other classroom activities in current legal software applications, which include legal software used for conflict-checking, timekeeping, litigation support and trial preparation. Prerequisite: PL 101 and CAS 133. Audit available.

PL 140. Immigration Law for Paralegals. 3 Credits.
Provides an overview of United States immigration laws. Includes review and study of many critical immigration law doctrines, including nationality and citizenship, inadmissibility and deportability grounds, the worldwide immigrant selection system, basic administrative law concepts, asylum and refugee law, and defenses to deportation. Includes analyzing fact situations, reviewing caselaw, drafting documents and applying remedies, principles and doctrines. Prerequisite: PL 101. 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 how and when to use computers for legal research and operational content differences between Westlaw and Lexis. Includes retrieving specific documents, checking citations, and practice research. Prerequisite: PL 201. Audit available.

PL 204. Applied Legal Research and Drafting. 3 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 206. Intellectual Property Law. 3 Credits.
Introduces the basic terms, concepts, laws, and administrative rules necessary to interpret and accomplish tasks typically assigned to paralegals by attorneys in intellectual property (IP) law practices. Emphasizes patent and trademark prosecution (filing documents with the United States Patent and Trademark Office), copyrights, and to a lesser extent, unique facets of IP litigation. Prerequisite: PL 101. Audit available.

PL 208. Family Law. 3 Credits.
Covers theory, procedure, and practical aspects of a domestic relations practice. Includes dissolution of marriage, issues of custody, visitation and property and debts, adoption, paternity, domestic violence, and prenuptial and co-habitation agreements. Prerequisite: PL 101. Audit available.

PL 210. Elder Law. 3 Credits.
Explores and provides strategies for preserving clients' quality of life as they age in the field of elder law, including important planning issues, such as where to live: financial management; health care; protection; insuring against risk of high costs of care; and planning for serious illness and death. Covers various tools, including elder abuse protection, long term care, Medicare and Medicaid, insurance, trusts, social security, guardianships and conservatorships and other planning issues. Prerequisite: PL 101 and PL 109. Audit available.

PL 216. Employment Law. 3 Credits.
Overview of Employment Law claims and remedies under state and federal law, including employment at will doctrine; wrongful discharge claims; discrimination based upon disability, age, gender and other claims; retaliation claims; Equal Pay Act, Family Medical Leave Act; health and safety issues; BOLI process; and other relevant issues. Prerequisites: PL 101. Audit available.

PL 219. Contract and Consumer Law. 3 Credits.
Provides an overview of contract law and selected consumer law claims and defenses. Includes understanding the basics of contract information, contract provisions, contract claims and defenses. Covers selected consumer law issues, including lemon law, warranties and fair debt collection. Prerequisite: PL 101. Audit available.

PL 220. Worker's Compensation. 3 Credits.
Covers principles and procedures of the Oregon's worker's compensation system. Introduces the rules and concepts that control the right to compensation within the system as well as the procedural rules. Prerequisite/concurrent: PL 101. Audit available.

PL 221. Bankruptcy Law. 3 Credits.

PL 222. Corporate Law Practice. 3 Credits.
Covers most significant state corporation law: how to assist in preparation and filing of documents necessary to form a corporation, how to draft resolutions for corporate shareholders and directors' meetings, and how to pay dividends to shareholders or to terminate business and distribute property. Prerequisite: PL 101. 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 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. Prerequisite/concurrent: PL 101. Audit available.

PL 230. Litigation II. 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 101, PL 105, and PL 130. Audit available.

PL 235. Litigation III. 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 depositions and trial, and manage trial technology. Prerequisites: PL 101, PL 105 and PL 130. Prerequisite/concurrent: PL 230. Audit available.

PL 240. Environmental Law. 3 Credits.
Covers environmental law as it applies to state and federal agencies. Focuses on specific administrative agencies, as well as career opportunities in the field of administrative law. Prerequisite: PL 101. Audit available.

PL 275. Paralegal Career Development. 1 Credit.
Covers application process and practices used to obtain employment in the legal field and begin developing a paralegal career or career in an alternative, related legal field. Required: 18 credits earned in Paralegal courses. Prerequisites: PL 101. 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.

PL 280B. Cooperative Education: Paralegal II. 1-3 Credit.
Covers application process and practices used to obtain employment in the legal field and begin developing a paralegal career or career in an alternative, related legal field. Required: 18 credits earned in Paralegal courses. Prerequisites: PL 101. Audit available.

PLH 185. Computer Ethics. 4 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.

Philosophy
PHL 191. Analysis & Evaluation of Argument. 4 Credits.
Identifies and analyzes arguments by 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. Illustrates common reasoning errors involving fallacies and
provides 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/AAOT, Arts and Letters/AS, Arts and Letters/AAS,
Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 195. Science, Skepticism, & the Unknown. 4 Credits.
Introduces scientific method, assessment criteria for scientific observations and
explanations and the difference between genuine and pseudoscience. 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.

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/AAOT, 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 philosophical questions and approaches associated with metaphysics (being) and epistemology (knowing) via the works of important figures in the
history of philosophy. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement
test scores. Audit available. 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.

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/
AAOT, 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/AAOT, 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 attempt 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/AAOT, 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 philosophical questions and approaches involving religious concepts
associated with faith, God, mysticism, morality, identity, language, and death.
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.

PHL 205. Biomedical Ethics. 4 Credits.
Promotes applying ethical concepts to biomedical situations and ethical dilemmas,
including those confronted by nurses and other health care workers. Explores topics
including patient rights, informed consent, end of life care, genetic engineering,
and health care policy. 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.

PHL 206. Introduction to Environmental Ethics. 4 Credits.
Investigates the ethical questions that pertain to human choices regarding the
environment. Explores questions such as, 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/AAOT, Arts and Letters/AS, Arts and
Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 207. Ethics and Aging. 4 Credits.
Investigates central ethical issues pertaining to the care of elderly patients.
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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 208. Political Philosophy. 4 Credits.
Introduces to and analyses 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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and
Letters/ASOT-B.

PHL 209. Business Ethics. 4 Credits.
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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 211. Existentialism. 4 Credits.
Investigates existential philosophy from the 19th Century to the present. Introduces
different branches of existentialist thought and the influence existentialism had
on philosophy, literature, and culture in the 19th and 20th Centuries. Includes
examination of many world cultures. In seminar/workshop format, the class involves the study
of philosophical ideas and human experience. Assignments may include the
reading of philosophical texts and the writing of interpretive essays, a 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/AAOT, 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 (except in online classes), 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/AAOT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

PHL 213. 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 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.

PHL 222. The Philosophy of Art and Beauty. 4 Credits.
Explores 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, 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/AAOT, 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.**
Provides independent study format allowing participation 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 120A 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, 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.**
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.

**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, and 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 124. World Dance. 1 Credit.**
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. This course is also offered as D 170; a student who enrolls in this course a second time under either designator will be subject to the course repeat policy. Audit available.

**PE 130A. Adapted Physical Education I. 1 Credit.**
Provides instruction in 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, muscular 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, muscular 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, muscular strength and endurance, flexibility, and body composition. Introduces instruction regarding individual exercise programming utilizing two or more components of fitness (muscular strength and endurance, cardiovascular fitness, flexibility, body composition.) Audit available.

**PE 130D. Aquatic Adapted 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. Develops 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, muscular 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. Develops 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, muscular strength and endurance, flexibility, and body composition. Covers models for developing individual exercise programming utilizing two or more components of fitness (muscular strength and endurance, cardiovascular exercise, flexibility and body composition.) Audit available.

**PE 130F. Aquatic Adapted Physical Education III. 1 Credit.**
Covers exercises that deal with acute or chronic injuries and disabilities to improve fitness, health and overall wellness through structured water exercise. Continues development of knowledge and skills needed to perform safe and proper group and individual fitness exercises in the water. Covers models for developing individual exercise programming utilizing three or more components of fitness (muscular strength and endurance, cardiovascular exercise, flexibility and body composition.) Audit available.

**PE 140A. Boxing I. 1 Credit.**
Introduces basic knowledge and 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 140B. Boxing II. 1 Credit.**
Expands knowledge, application and skills of the techniques used in Boxing I. 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). 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 I. Builds upon fundamental techniques learned in Zumba Fitness I. Promotes continued improvement of cardiorespiratory conditioning, muscular endurance, and flexibility through the safe and proper execution of Zumba. Audit available.

**PE 142C. Zumba Fitness Gold. 1 Credit.**
Introduces a slower paced Zumba. Incorporates Zumba music at half pace for lower impact work. Promotes improved cardiorespiratory conditioning, muscle endurance, flexibility and body composition. Audit available.

**PE 143A. Aquatic Exercise I. 1 Credit.**
Includes aerobic exercise, strength conditioning, and stretching movements set to music, in an aquatic environment. Incorporates exercise in both shallow and deep water in order to take advantage of the natural buoyancy and resistance properties of water. Swimming skills are not required. Audit available.

**PE 143B. Aquatic Exercise II. 1 Credit.**
Includes aerobic exercise, strength conditioning and stretching movements set to music, in an aquatic environment. Incorporates exercise in both shallow and deep water in order to take advantage of the natural buoyancy and resistance properties of water. Includes exercises and equipment related to improving speed, agility and quickness. Swimming skills are not required. Audit available.
PE 143C. Aquatic Exercise Ill. 1 Credit. Includes aerobic exercise, strength conditioning, and stretching movements set to music in an aquatics environment. Incorporates exercise in both shallow and deep water in order to take advantage of the natural buoyancy and resistance properties of water. Continues utilization of exercises and equipment related to improving speed, agility, and quickness. Introduces add-on, pyramid, and layer choreography. Swimming skills are not required. Audit available.

PE 162G. Cardio Conditioning. 1 Credit. Introduces cardiovascular conditioning to improve fitness, health, and overall wellness through structured group fitness classes and individualized cardiovascular conditioning exercise. Stresses knowledge and skills needed to perform safe and proper group and individual cardiovascular exercises. The focus of the course and skills learned will vary by campus, term, and/or instructor. Students will participate in activities that promote and emphasize improved cardiovascular conditioning, as well as muscle strength and endurance, flexibility, and body composition. Audit available.

PE 162J. Brazilian Jiu Jitsu I. 1 Credit. Improves fitness, health and overall wellness through Brazilian Jiu Jitsu (BJJ) fitness activity. Covers basic knowledge and skills needed (such as movements, positions, and concepts) in a progressive skill building approach. Emphasizes proper technique, mobility, pressure and leverage awareness. Intended for those interested in establishing a foundational knowledge of BJJ, or for those who would like to learn self-defense utilizing ground techniques. Both Gi techniques and non-Gi techniques will be taught in the class. Students will be required to obtain Gi by the 3rd week of class. Audit available.

PE 162K. Brazilian Jiu Jitsu II. 1 Credit. Expands knowledge, application and skills in Brazilian Jiu Jitsu (BJJ). Continues fundamentals and techniques explored in Brazilian Jiu Jitsu I. Recommended: PE 162J or instructor approval. Audit available.

PE 162L. Brazilian Jiu Jitsu III. 1 Credit. Continues to expand knowledge, application and skills in Brazilian Jiu Jitsu. Builds upon fundamentals and techniques explored in Brazilian Jiu Jitsu I and II. Introduces Brazilian Jiu Jitsu leadership concepts and skills. Recommended: PE 162K or instructor approval. Audit available.

PE 162M. MMA Combative Conditioning. 1 Credit. Introduces high-intensity group exercise focusing on challenging your body in a dynamic and energetic fashion. Various activities and exercises in challenging conditions. Utilizes resistance, balance, and compounded motions to improve overall fitness to help optimize athletic performance while minimizing potential injury when performing martial arts activities. Audit available.

PE 162O. Core Fitness. 1 Credit. Improves fitness, health, and overall wellness through structured group exercise. Performs safe and proper exercises to stabilize the core muscles which include back, abdominal, hip, pelvis and lateral trunk muscles. The focus of the course and skills learned will vary by campus, term, and/or instructor. Promotes improved cardiovascular conditioning, muscle strength and endurance, flexibility, and/or composition with special emphasis on involvement of strong core muscles. Audit available.

PE 180A. Beginning Swimming. 1 Credit. Introduces swimming and aquatic skills to those who have very limited or no swimming skills and may be uncomfortable in the water. Audit available.

PE 180B. Intermediate Swimming. 1 Credit. Continues the development of swimming and water safety skills. New strokes introduced include the breaststroke, sidestroke, and elementary backstroke. Deepwater skills also developed. Prerequisite: PE 180A or instructor permission. 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 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 180N. Swim Conditioning III. 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. Introduces open water swimming techniques. Recommended: Swim Conditioning II; 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 individual strength and fitness. Includes individual evaluation and weight lifting program plans. Recommended: PE 181A 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 level swim skills or equivalent. Audit available.

PE 181D. Circuit Interval Training I. 1 Credit. Improves cardio/aerobic, anaerobic and strength through interval training, the use of free weights and/or gym circuit weight training machines and functional fitness training. Audit available.

PE 181E. Circuit Interval Training II. 1 Credit. Covers the continued improvement of aerobic and anaerobic fitness, and strength through circuit interval training. Includes the use of free weights and/or gym circuit weight training machines and functional fitness training. Prerequisite: PE 181D. Audit available.

PE 181M. Boot Camp II. 1 Credit. Focuses on cardio-respiratory fitness, muscular strength and endurance. Includes interval training, dynamic stretching, strength trainings, high intensity fitness training, muscle confusion training, endurance training and plyometrics. 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 skill 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. Emphasizes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, body composition, and skill-related fitness (balance, speed, agility, reaction time, coordination). Recommend: Beginning Group Fitness or a recent group exercise class. Audit available.

PE 182C. Beginning Fitness and Walking. 1 Credit. Beginning level, self-paced walking programs and a variety of conditioning exercises for specific body areas. Provides instruction for integrating walking into a lifetime fitness program. Audit available.

PE 182D. Intermediate Fitness & Walking. 1 Credit. Improves fitness through self-paced walking programs designed to increase the frequency and duration of regular workouts. Incorporate a walking program into a total fitness program for future use. Recommended: Beginning Fitness and Walking or average fitness level. Audit available.

PE 182E. Jogging for Health. 1 Credit. Introduces the proper running technique and provides the opportunity to improve general fitness. Running will be done on the track until student and instructor feel the student is ready to run on the road. Audit available.

PE 182F. Boot Camp I. 1 Credit. Focuses on cardio respiratory fitness and muscular endurance using dumbbells and other equipment (physioballs, steps, etc.) Covers key muscle groups, facilitating muscle fitness and flexibility gains. Introduces high-intensity callisthenic training in a group class format. Audit available.

PE 182G. Tai Chi II. 1 Credit. Continues the exploration of theories and movement principles, meditation and Yi (mind) development introduced in Tai Chi I. Expands upon the basic techniques to develop a life-long practice of Tai Chi. Recommended: PE 1825 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 182L. Power 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 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.
Introduces an independent and applied physical exercise program to promote health, strength, and flexibility exercises. Incorporates individual and group exercises to improve cardiovascular fitness. Audit available.

PE 182P. Pilates I. 1 Credit.
Covers the practice of Pilates with a focus on increasing core strength and stabilization, muscle balance, tone, coordination, and flexibility. Incorporates non-impact mat exercises designed to develop whole body awareness and control, and includes modifications for various fitness levels. Audit available.

PE 182Q. Self-Paced Fitness. 1 Credit.
Introduces a self-paced physical exercise program encompassing cardiovascular conditioning, strength training and flexibility exercises. Incorporates individual and independent physical exercise and requires tracking exercises in a log/journal. Audit available.

PE 182R. Back Care. 1 Credit.
Expands 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 182S. Tai Chi I. 1 Credit.
Explores this ancient form of gentle movement which emphasizes balance, concentration and coordination. Addresses traditional styles of Tai Chi, meditation and Yi (mind) development techniques in an easy to follow format. 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. Requirement: 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.

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 applied physical exercise program to promote physical activity and improve body composition. Promotes healthy behavior change patterns. Covers the application of pre- and post-fitness assessment. 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 and emphasizes improved cardiorespiratory conditioning, muscle strength and endurance, flexibility, and body composition through sport specific activity. May be repeated twice for credit. Audit available.

PE 183A. Beginning Hiking. 1 Credit.
Introduces hiking concepts and skills necessary to hike safely as a regular fitness activity. Includes fitness for hiking, route planning, safety, and environmental considerations. Required: Be able to comfortably walk on outdoor trails for three miles or more. Be prepared for day hiking trips off campus by providing your own transportation, parking fees and equipment. Audit available.

PE 183B. Introduction to Rock Climbing. 1 Credit.
Improves fitness, health and overall wellness through rock climbing. Explores rock climbing basics including: safety, proper gear and use, movement over rock, back rock rescue, climbing etiquette and environmental concerns. Several classes during the term will meet at a local indoor rock climbing gym to practice techniques and skills. Students need to provide transportation to and from the climbing facility, as well as pay a facility use fee to the climbing facility. Facility use fee may vary. Audit available.

PE 183C. Beginning Tennis. 1 Credit.
Includes basic history/terminology/etiquette and skills of game. Audit available.

PE 183E. Intermediate Tennis. 1 Credit.
Builds further on the beginning techniques of the game. Emphasizes singles, doubles and competition play. Audit available.

PE 183G. Beginning Golf. 1 Credit.
Covers fundamental techniques in the use of all clubs. Includes rules, course management, etiquette, range, putting green and pitching area practice and video assessment sessions. Requires playing a few rounds of golf outside of class. Audit available.

PE 183H. Intermediate Golf. 1 Credit.
Covers proper use of all clubs under variable conditions. Focuses on rules, etiquette and course management. Requires playing a few rounds of golf outside of class. Audit available.

PE 183I. Beginning Volkswalking. 1 Credit.
Provides independent opportunity to achieve/maintain age-related walking/fitness levels through individual walking program and active participation in Volkswalking events. Due to independent nature of course, requires weekly walking log reports via current email account. Audit available.

PE 183J. Intermediate Volkswalking. 1 Credit.
Allows student to independently continue progress from beginning age-related walking/fitness levels through individual walking program and active participation in intermediate Volkswalking activities. Due to nature of course, requires weekly walking log reports via current email account. Recommend: Beginning Volkswalking or average fitness level. 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 events. 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 racquet sport games: pickleball and badminton. Emphasizes rules, equipment, technique and strategy for both singles and doubles play. Audit available.

PE 183O. Beginning Table Tennis. 1 Credit.
Introduces fundamentals of table tennis skills in singles/doubles including serving, smashing, forehand/backhand rules and strategy. Emphasizes knowledge and recreational play. Audit available.

PE 183P. Intermediate 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 183Q. Advanced Table Tennis. 1 Credit.
Reviews skills, strokes and strategies used in singles and doubles play. Includes preparation 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 the 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 Kodokan Judo. Audit available.

PE 183W. Judo II. 1 Credit.
Build 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.
Introduces nordic ski techniques for groomed tracks and ungroomed snow conditions. Emphasizes speed control, efficient body movement and safety. Covers basic winter survival techniques, proper clothing, and trail etiquette. 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.
Introduces advanced nordic ski techniques. Prepares skiers to make dynamic technique adjustments to timing, terrain changes, turning for speed control and efficiency in skiing and telemark skiing. Addresses terrain changes, weather and snow conditions. Audit available.

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.
Covers the continued improvement of safe, enjoyable skiing, utilizing the skill of wedge christies at an intermediate level. Includes skidded parallel turns of varying radii with control on beginning to intermediate terrain. Addresses variables of weather, snow conditions and terrain. Prerequisite: PE 184D or equivalent permission. 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 steep 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 Snowboard Skiing. 1 Credit.
Basic skills necessary for safe and fun snowboarding on appropriate terrain will be taught. Also included: turns with control on beginning and beginning/intermediate terrain. The variables of weather and snow conditions will be addressed. Audit available.

PE 184J. Intermediate Snowboard 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. Stresses safe boarding with improvement in skill applications. The variables of weather and snow conditions will be addressed. Recommended: Beginning Snowboarding class or equivalent. Audit available.

PE 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 Snowboard 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 snowboard 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 184P. Advanced Hiking. 1 Credit.
Expands upon beginning hiking concepts and skills necessary to hike safely. Introduces advanced hiking topics such as longer route planning, map reading, compass use, GPS and other technologies, orienteering, and wilderness emergency planning. Required: Be able to comfortably walk on outdoor trails for six miles or more. Be prepared for day hiking trips off campus by providing your own transportation, parking fees and equipment. 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 an opportunity to develop basketball skills and knowledge at an intermediate level. Covers implementation of set plays and skills through drills and game play. Recommended: Beginning basketball skills. 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, and strategies of game. Audit available.

PE 185E. Intermediate Volleyball. 1 Credit.
Builds further on the beginning techniques of the game. Emphasizes team play, special situations and officiating. Beginning volleyball class or instructor permission required. Audit available.

PE 185F. Advanced Volleyball. 1 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 shoulder roll. Beginning volleyball and intermediate volleyball skills or instructor permission required. Audit available.

PE 185G. Beginning Soccer. 1 Credit.
Basic skills, rules, and strategies for soccer will be taught. Includes dribbling, kicking, trapping, heading, throw-in, tackling, shooting, goalie kicks, penalty kicks, soccer formations (5-3-2, 4-3-3, 3-3-4, 2-4-4), defensive play, offensive rules, rules of soccer. Audit available.

PE 185H. Advanced Soccer. 1 Credit.
Presents more advanced soccer skills, strategies and rules not covered in the beginning course. Includes footwork (trapping, feinting, shielding, dribbling), tackling, volley kicking, shooting, heading, goalkeeper play, soccer formations, defense, offense, rules. Beginning and intermediate soccer skills required. Audit available.

PE 185I. Flag Football. 1 Credit.
Covers skills, rules and strategies. Emphasizes individual and team offensive, defensive and kicking techniques as well as concepts of team organization and play. Considerable time is spent playing the game. Audit available.

PE 185J. Beginning Softball. 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 Soccor. 1 Credit.
Applies skills acquired in basic/beginning soccer play. Utilizes kicking, passing, dribbling, heading, play strategies, and goal-keeper skills. May be played on outdoor field or altered for indoor play. Audit available.

PE 185M. Lacrosse - Beginning. 1 Credit.
Includes basic history, terminology, etiquette, strategies and skills of game. May be played on outdoor field or altered for indoor play during adverse weather conditions.

PE 185N. Lacrosse - Intermediate. 1 Credit.
Builds further on the beginning techniques of the game. Emphasizes team play, special situations and officiating. Includes basic history, terminology, etiquette, strategies and skills of game. May be played on outdoor field or altered for indoor play during adverse weather conditions. Prerequisite: PE 185M or instructor permission. Audit available.

PE 185P. Intermediate Softball. 1 Credit.
Expands knowledge, application, strategy, team and individual skills utilized in the game of softball. Includes batting, running bases and sliding, throwing, pitching, catching, fielding and team communication. Audit available.

PE 185Q. Advanced Softball. 1 Credit.
Expands the knowledge, application, strategy, team and individual skills utilized in the game of softball. Includes skill development in batting, running bases, sliding, throwing, pitching, catching, fielding, team strategy and team communication. Audit available.
PE 185R. Soccer Team I. 1 Credit.
Covers the skills and strategies of soccer in preparation for playing on competitive soccer teams and clubs. Audit available.

PE 185S. Soccer Team II. 1 Credit.
Covers the skills and strategies of soccer at a more advanced level for continuation of playing on competitive soccer teams and clubs. Audit available.

PE 185U. U-JAM Dance Fitness I. 1 Credit.
Introduces a cardiovascular dance fitness workout that fuses world music with pre-designed dance choreography. Includes interval training that is built in by sequencing high intensity work periods followed by active rest periods, which develops both aerobic and anaerobic energy systems. Promotes maximizing caloric expenditure. Audit available.

PE 185V. U-JAM Dance Fitness II. 1 Credit.
Introduces an advanced cardiovascular dance fitness workout that fuses world music with pre-designed dance choreography. Includes interval training that is built in by sequencing high intensity work periods followed by active rest periods, which develops both aerobic and anaerobic energy systems. Promotes maximizing caloric expenditure. Recommended: PE 185U. Audit available.

PE 186D. Ballroom Dance. 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. Audit available.

PE 186E. Ballroom II. 1 Credit.
Continues the development of dance skills in ballroom dance at an intermediate level as well as enriching the depth of the dance technique and complexity of choreography. Focus placed on: appropriate partnering in order to lead or follow, rhythm, style, and phrasing. Dances may include: Waltz, Foxtrot, Tango, Quickstep, Rumba, Cha-Cha, Swing, Samba, Jive, and Night Club Two Step. PE 186E and D 184E are equivalent and only one may be taken for credit. Prerequisite: PE 186D or D 184 or instructor approval. Audit available.

PE 186F. 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 can be taken for credit. Audit available.

PE 186G. 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 musicality, and jazz dance vocabulary in more challenging combinations. D 151 and PE 186G are equivalent and only one can be taken for credit. Recommended: D 150 or PE 186F or equivalent. Audit available.

PE 186H. 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 186H are equivalent and only one may be taken for credit. Recommended: D 151 or PE 186G or equivalent. Audit available.

PE 186K. Tap Dance I. 1 Credit.
Introduces beginning skills in tap dance. Covers basic steps, terminology, rhythms, and combinations. D 175A and PE 186K are equivalent and only one may be taken for credit. 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 and 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 designed to improve muscular fitness. Emphasizes identifying and utilizing progression curves 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. Prerequisites: Acceptance to the Fitness Technology Program or instructor approval, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PE 282B. Professional Activities: Special Populations. 2 Credits.
Explores fitness instruction and leadership for older adult populations. Provides tools and knowledge needed to design fitness training programs for healthy older individuals 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. 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. Prerequisites: Acceptance to the Fitness Technology Program or instructor approval and WR 115, RD 115 and MTH 20 or equivalent placement test scores. 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. Prerequisites: Acceptance to the Fitness Technology Program or instructor approval and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PE 288. Professional Activities: Team Sports Training. 2 Credits.
Explores fitness instruction and leadership in team sports. Covers components of coaching team sports and skill-related physical fitness such as: progressions and techniques of practice format, sport specific drills, plyometrics, and speed-agility quickness coaching strategy and methodology. Prerequisites: Acceptance to the Fitness Technology Program or instructor approval, and WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

PE 291A. Lifeguard Training. 2 Credits.
Designed to help students learn, practice, and develop the skills of water safety. Successful completion results in receiving an American Red Cross Lifeguard Training certificate. Red Cross swim screening test required. Audit available.

PE 292A. Water Safety Instructor. 2 Credits.
Teach swimming and water safety and further develop personal skills in these areas. Successful completion leads to receiving the American Red Cross Water Safety instructor (WSI) certificate. Students must be at least 17 years of age, skilled in swimming and water safety, and have completed Red Cross requirements. Audit available.

PE 295. Health and Fitness for Life Lab. 1 Credit.
Explores the interrelationship of the five components of physical fitness, basic nutrition concepts, and stress management activities to increase individual health and wellness through lab sessions, fitness assessments, and fitness program development. Corequisite: HE 295. Audit available.
**Physics**

**PHY 101. Fundamentals of Physics I. 4 Credits.**

**PHY 102. Fundamentals of Physics II. 4 Credits.**
A conceptual study of mechanics. Topics include properties of matter, heat and thermodynamics, and atomic and nuclear physics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AAS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

**PHY 103. Fundamentals of Physics III. 4 Credits.**
A conceptual study of physics. Topics include waves and sound, electricity and magnetism, and light and optics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

**PHY 112. Elementary Astronomy. 4 Credits.**
Introduces the contents of our solar system, including the earth, its moon, the other planets, and major asteroids, comets, and meteors. Algebra recommended. 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/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

**PHY 113. Elementary Astronomy. 4 Credits.**
Introduces stellar astronomy, including our sun, properties of stars, and stellar evolution. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

**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, prerequisites: MTH 111 and its prerequisite requirements. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, Science, Math, Computer Science/ASOT-B.

**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/AO&T, 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/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, 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, engineering majors. Prerequisites: MTH 251 and MTH 252 and their prerequisite requirements. Prerequisite: Concurrent: MTH 252. Audit available. This course fulfills the following GE requirements: Science, Math, Computer Science/AO&T, Science, Math, Computer Science/AS, Science, Math, Computer Science/AGS, 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, Math, 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/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 requirements. Social Sciences/AO&T, Social Science. Promotes respect for diverse perspectives as it provides background information and 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. This course fulfills the following GE requirements: Social Sciences/AO&T, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

**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. Co-requisite: PS 201 or PS 202. Audit available.

**PS 201. U.S. Government. 4 Credits.**
Examines the development of the 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/AO&T, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

**PS 202. U.S. Public Policy & Democracy. 4 Credits.**
Examines the public administration of and management 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 other entitlements. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AO&T, Social Sciences/AS, Social Sciences/AAS, 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/AO&T, Social Sciences/AS, Social Sciences/AAS, 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/AO&T, Social Sciences/AS, Social Sciences/AAS, 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 rivalries and the quest for security, questions of national sovereignty and international cooperation, war and peace, global issues, and the future. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AO&T, Social Sciences/AS, Social Sciences/AAS, 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 placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, 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 in Japan, global issues, nuclear proliferation, 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 cooperation among them. Includes liberalism, conservatism, socialism, fascism, and other idea systems. 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.

PS 241. Modern India and Its Neighbors. 4 Credits.
Introduces the politics and history of India emphasizing economic and other policies 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. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

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 social issues in Japan, Laos, 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. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

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.

Psychology

PSY 101. Psychology and Human Relations. 4 Credits.
Applies psychological principles to relationships in both personal and professional interactions. Includes an overview of basic personality and social psychology concepts, as well as specific skill development in the areas of communication, listening, and conflict resolution. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 201A. Introduction to Psychology - Part 1. 4 Credits.
Surveys the major concepts, theoretical perspectives, empirical findings, and historical trends in scientific research, biological psychology, sensation and perception, learning theory, memory, language, cognition, consciousness, and human development. Provides an overview of popular trends, examines the overarching themes of heredity vs. environment, stability vs. change, and free will vs. determinism, and emphasizes the sociocultural approach which assumes that gender, culture, and ethnicity are essential to understanding behavior, thought, and emotion. Psychology 201A is the first term of a two-term sequence in introductory psychology. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. 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.

PSY 202A. Introduction to Psychology - Part 2. 4 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, examines the overarching themes of heredity vs. environment, stability vs. change, and free will vs. determinism, and emphasizes the sociocultural approach which assumes that gender, culture, and ethnicity are essential to understanding behavior, thought, and emotion. Psychology 202A is the second term of a two-term sequence in introductory psychology. Recommended: PSY 201A or PSY 201. 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.

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, and PSY 201A or one year of biology. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 214. Introduction to Personality. 4 Credits.
Covers a variety of personality theories including the theoretical and scientific explanations for individuals’ characteristic patterns of perception, thought, emotion and behavior. Emphasizes the understanding and mastery of personality constructs applied to students’ personal and professional lives. Recommended: PSY 201A or 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/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 215. Human Development. 4 Credits.
Surveys major developmental theories and patterns of change and continuity from birth to death in human subjects. Emphasizes biological, cognitive, and emotional development through the lifespan. Examines cultural influences on development. Recommended: PSY 201A or 202A. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

PSY 216. Social Psychology. 4 Credits.
Surveys scientific studies of how individuals think about, influence, and relate to one another with respect to social beliefs, persuasion, attraction, conformity, obedience, prejudice, aggression, and pro-social behaviors. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AADT, Social Sciences/AS, Social Sciences/AGS, Social Sciences/ASOT-B, Social Sciences/AAS, 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: Cultural Literacy, Social Sciences/AADT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.
PSY 236. Psychology of Adult Development and Aging. 4 Credits.
Provides an overview of the biological, cognitive, and psychosocial aspects of adulthood and aging including theories of aging and specific research in the field of gerontology. Focuses on genetic and environmental factors that influence health as we age. Includes the challenges specific to gender, ability level, and cultural and ethnic background. Department permission required.

RAD 104. Radiographic Positioning IV. 4 Credits.
Covers the production of radiographic images of the spine, extremities, and upper and lower thorax. Lab includes the use of x-ray tubes, C-arms, and application of advanced techniques. Prerequisites: RAD 103, WR 115, RD 115, and MTH 20 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

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 107. Radiographic Equipment I. 4 Credits.
Covers fundamentals of energy and measurements, atomic structures, molecules, electricity, magnetism, electromagnetism, transmitters, and rectifiers. Department permission required.

RAD 203. Applied Radiography Topics. 2 Credits.
Examines legal principles in radiography by looking at a variety of topics related to medical/professional ethics. Historical, cultural, and cross-cultural perspectives. 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, medioclegal and ethical protocol, recordkeeping and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 140.

RAD 211. Advanced Imaging Modalities. 4 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 132.

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, medioclegal and ethical protocol, recordkeeping, and patient care. Requires clinical competencies, objectives, performance assessment and attendance. Department permission required. Prerequisite: RAD 220.

RAD 240. Radiographic Clinic VIII. 7 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 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.

Reading
RD 80. Reading 80. 3 Credits.
Covers vocabulary, dictionary use, motor skills, comprehension, and some study skills. Prerequisite: ABE 0783 or ABE 0790 or placement into RD 80. Audit available.

RD 80A. Reading 80A. 3 Credits.
Topics include vocabulary, dictionary use, motor skills, comprehension, reading rate improvement, and study skills. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 81A. Reading 81A. 1 Credit.
Focuses on instruction in vocabulary, study skills, and dictionary use. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 82A. Reading 82A. 2 Credits.
Focuses on instruction in vocabulary, comprehension, study skills, and dictionary use. Prerequisite: ABE 0783 or placement into RD 80. Audit available.

RD 90. Reading 90. 3 Credits.
Improves reading through work on vocabulary development, motor skills, comprehension and some reading rate improvement. Prerequisite: Placement into RD 90 or successful completion of RD 80 AND placement into WR 80. Audit available.

RD 90A. Reading 90A. 3 Credits.
Reading improvement through work on vocabulary development, motor skills, comprehension and reading rate. Prerequisite: RD 80 Audit available.

RD 91A. Reading 91A. 1 Credit.
Focuses on reading effectiveness. Comprehension strategies, vocabulary development, and reading rate are emphasized. Audit available.

RD 92A. Reading 92A. 2 Credits.
Focuses on reading effectiveness. Comprehension strategies, vocabulary development, and reading rate are emphasized. Prerequisite: Placement into RD 90 or successful completion of RD 80. Audit available.

RD 95. Reading for Enjoyment. 3 Credits.
Help students develop their abilities to read, understand, and enjoy literature. Prerequisite: Placement into RD 90 or instructor permission. Audit available.

RD 115. College Reading. 4 Credits.
Focuses on expanding reading frequency and effectively reading complex college level texts; emphasizes comprehension strategies, critical reading and thinking skills, information literacy, vocabulary development, student success strategies and adapting reading rate to different reading tasks. Prerequisite: Placement into RD 115 or successful completion of RD 90 AND placement into WR 90 OR successful completion of WR 80; OR ESOL 252 and ESOL 260. Audit available.

RD 116. College Vocabulary Development. 3 Credits.
Adds significantly to students' reading, writing, and speaking vocabularies; fosters interest in words, and offers strategies for continuous vocabulary development throughout life. Prerequisite: Placement into RD 115 or successful completion of RD 90. Audit available.

RD 117. Advanced College Reading. 3 Credits.
Further exploration of topics covered in RD 115, emphasizing inferential, critical, and technical reading. Prerequisite: Successful completion of RD 115. 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/AOAT, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B, and Arts and Letters/ASOT-A.

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/AOAT, Arts and Letters/AS, Arts and Letters/AAOT, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

R 211. Introduction to the Old Testament/Hebrew Bible. 4 Credits.
Examines the biblical texts of the Old Testament from a distinctively academic perspective. Focuses on major historical events and interactions with various empires as they relate to the faith and definition of early Israel. 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/AOAT, Arts and Letters/AS, Arts and Letters/AS, Arts and Letters/AS, Arts and Letters/AGS, Arts and Letters/AGS, Arts and Letters/ASOT-B, and Arts and Letters/ASOT-B.

R 212. Introduction to the New Testament. 4 Credits.
Examines the historical antecedents of New Testament events and the context in which New Testament texts were written and the situations they were intended to address. Focuses on the placement of the texts within the development of the early Christian movement and the different genres represented within the writings of the New Testament canon. Prerequisites: WR 115, RD 119 and MTH 20 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/AS, Arts and Letters/AAOT, Arts and Letters/AS, Arts and Letters/ASOT-B, and 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 110C. First Year Russian Conversation. 1 Credit.**
Continues to practice structures and vocabulary presented in RUS 150 in a conversational format. Recommended: Enrollment in RUS 150. Audit available.

**RUS 113A. First Year Russian Conversation. 3 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 Russian. 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/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/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

**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 201 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.

**RUS 203. Second Year Russian. 5 Credits.**
Continued work 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/AAT, Arts and Letters/AS, Arts and Letters/AAS, Arts and Letters/AGS, Arts and Letters/ASOT-B.

**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, Chekhov, and Tolstoy. Explores themes, genres, style, historical context, social, and cultural issues. Course conducted in English and all readings in English. No knowledge of Russian needed. Prerequisite: Placement into WR 121.

**RUS 260A. Russian Culture. 3 Credits.**
Introduces Russian traditional and modern culture and society through analysis of cultural, historical and social issues in film and media materials. Explores concepts such as self-identity, Russian views of the West, poverty and wealth, nationalism and racism, cultural pride, modern social issues, gender roles, families, marriage and divorce, societal roles, and more. Course conducted in English. Russian materials are subtitled in English. No knowledge of Russian needed. 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.

**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, female gender roles, Russian families, the communist past, ethnic conflict, views of the west, and Russia's self identity. Course conducted in English and all films with English subtitles. Course can be taken out of sequence. Audit available.

**RUS 261B. Russian Culture. 2 Credits.**
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/AGS, Arts and Letters/ASOT-B.

**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.**
Focuses on grammatical features, non-manual behaviors and higher language skill development in ASL. Includes a wide range of academic topics in ASL. Prerequisites: ITP 111 and admission to the Sign Language Interpretation program and department permission required.

**ITP 113. American Sign Language III. 5 Credits.**
Focuses on additional grammatical features, non-manual markers, advanced language skill development, including discourse skills, in ASL. Prerequisites: ITP 112 and admission to Sign Language Interpretation program and department permission.

**ITP 120. Fingerspelling I. 2 Credits.**
Emphasizes increased fingerspelling skills by incorporating them into the context of ASL conversation. Introduction to some strategies and proper production when fingerspelling. Prerequisite: 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 into Sign Language Interpretation program required. Prerequisite: ITP 120.

**ITP 180. Field Experience. 2 Credits.**
Provides practical experience through observations of professional interpreters. Includes participation in professional development, Deaf community activities, and contact with Deaf children/adults. Explores relevant issues through journals and recitation. Criminal background check required. Good standing in Sign Language Interpretation program required. Department permission required. Corequisite: ITP 112, ITP 265.

**ITP 211. American Sign Language IV. 4 Credits.**
Focuses on more advanced grammatical features, non-manual markers, language skill development, register continuum, and discourse skills in ASL. Prerequisites: ITP 211 and admission to the Sign Language Interpretation program and department permission required.

**ITP 212. American Sign Language V. 4 Credits.**
Focuses on more advanced grammatical features, non-manual markers, language skill development, register continuum, and discourse skills in ASL. Prerequisites: ITP 212 and admission to the 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 I. 4 Credits.
Analyzes the history and culture of Deaf people. Examines the influence of geography, culture, attitudes, and economics on the education, employment, and legislation related to Deaf people. Prerequisite: Admission into Sign Language Interpretation program and department permission required.

ITP 242. Deaf Culture II. 2 Credits.
Analyzes 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, and advocacy and political action relating to modern Deaf issues. Course is taught in ASL with no interpretation. Prerequisite: ITP 241 and admission into Sign Language Interpretation program and department permission required.

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: Special Settings. 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 265.

ITP 267. Interpreting Theory III: K-12 Settings. 3 Credits.
Explores the role and functions of interpreters in educational settings. 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 266.

ITP 268. Interpreting Theory IV: Business Practices. 2 Credits.
Covers current business practices, marketing, networking, and resources at national, state, and local levels. Includes development of a business plan, resume, portfolio, certification plan, and other tools for beginning one’s career as a professional sign language interpreter. Prerequisites: ITP 267.

ITP 270. Interpreting Process I: Foundations. 6 Credits.
Introduces the fundamentals of the interpreting process, beginning with theories of discourse and language analysis while analyzing “dynamic equivalency” between source and target languages. Covers the application of principles of message analysis to translation from ASL to English and English to ASL. Prerequisite: Admission to the Sign Language Interpretation Program and department permission required.

ITP 271. Interpreting Process II: Consecutive Interpreting. 4 Credits.
Introduces consecutive interpretation from ASL to English and from English to ASL. Prerequisite: ITP 270 and admission to the Sign Language Interpretation program and department permission required.

ITP 272. Interpreting Process III: Simultaneous Interpreting. 4 Credits.
Introduces simultaneous interpretation from ASL to English and from English to ASL. Prerequisite: ITP 271 and admission to the Sign Language Interpretation program and department permission required.

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 275. Interpreting Process VI: Interpreting for Children. 4 Credits.
Develops interpreting skills specific to working with children in K-12 education. Explores content and activities in K-12 education and adaptation of communication to children’s language and cognitive abilities. Includes informal assessment of children’s language use, monitoring goals and strategies. Analyzes classrooms for interpretability and explores professional development for educational interpreters. Prerequisite: ITP 274 and ITP 261.

ITP 276. Specialized Discourse I. 3 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. Admission 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 into 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 on-going feedback from professional interpreters acting as mentors. Passing the qualifying exam the term prior to enrollment is required.

ITP 284. Interpreting Internship II. 3 Credits.
Provides an opportunity to apply interpreting skills in a K-12 educational setting or Video Relay Services to gain practical experience as an educational interpreter. Includes placement within a structured setting and with ongoing feedback from professional educational interpreters acting as mentors. Prerequisites: ITP 283 or a qualifying score on the Benchmark Assessment and Department permission 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.

Skill Center
SC 12A. Introduction to Computer Applications. 4 Credits.
Introduces hardware and software, operating systems, graphical user interface, word processing, spreadsheets, electronic mail and the Internet, along with problem solving, business graphics, applications integration, database processing and HTML programming. Audit available.

SC 12B. Foundational Computer Literacy. 2 Credits.
Explores computer technology and the impact that it has on personal and professional lives and develops foundational computer and keyboarding skills using windows system, e-mail, browsers, word processing, and presentation software.

SC 99B. Career College and Readiness. 0 Credits.
Provides support and assistance in enhancing pre-entry college and career characteristics so that students will be more likely to enter college or the workforce successfully. Prepares students to access college services and programs. Teaches NACE Job Outlook skills and competencies.

Sociology
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 or equivalent placement test scores. Audit available. This course fulfills the following GE requirements: Cultural Literacy, Social Sciences/AAT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

SOC 205. Social Change in Societies. 4 Credits.
Explores how society changes 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/AAT, Social Sciences/AS, Social Sciences/AAS, 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/AAT, Social Sciences/AS, Social Sciences/AAS, 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, undemocratic institutions, and the violent resolution of conflict are considered. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. 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.

SOC 213. Diversity in the United States. 4 Credits.
Frames social status differences within the context of social structure and culture. Examines how inequality and privilege play out through social status and are reinforced through both culture and social structure. Includes statuses such as race, gender, ethnicity, sexual orientation, age, etc. Includes concepts such as: privilege, social stratification, cultural bias, institutional inequality, and social construction. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available. 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.

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/AAOT, Social Sciences/AS, Social Sciences/AAS, 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/AAOT, Social Sciences/AS, Social Sciences/AAS, 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, educational methods and practice, social change interventions, creative production and basic acting. This is the third course of a three course sequence. Prerequisites: SOC 214B and instructor permission. Audit available. 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.

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 historical perspective. Includes social analysis, group facilitation, social change interventions, creative production and basic acting. 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.

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/AAOT, Social Sciences/AS, Social Sciences/AAS, 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 a comparative and cross-cultural examination of religious beliefs, practices, and organization. Audit available.

SOC 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 how they influence the search for the peaceful resolution of 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 223. 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: 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.

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/AAOT, Social Sciences/AS, Social Sciences/AAS, 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: 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.

SOC 231. Sociology of Health & Aging. 4 Credits.
Introduces age-related health and aging in the 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/AAOT, Social Sciences/AS, Social Sciences/AAS, 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/AAOT, Social Sciences/AS, Social Sciences/AAS, 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, Africa, Mediterranean, and Native American cultures. West and Native North America 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.
Expands knowledge of sociology through work and/or volunteer experiences which provide opportunities for application of sociological learning objectives and practical skill development. Prerequisite: Instructor permission required.

SOC 280B. Cooperative Education: Community Service & Action Seminar. 2 Credits.
Expands knowledge of sociology through work and/or volunteer experiences which provide opportunities for application of sociological learning objectives and practical skill development. Prerequisite: Instructor permission required.

SOC 298. 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/AAOT, 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/AAOT, 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 111C. First Year Spanish Conversation. 1 Credit.
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 112B. First Year Spanish Conversation. 2 Credits.
Practice of structures and vocabulary of first year Spanish in a conversational format. 
Recommended: Completion of SPA 102 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: Completion of SPA 102 or instructor permission. Audit available.
SPA 113A. First Year Spanish Conversation. 3 Credits.
Continuation of SPA 112A. 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/AAOT, Arts and Letters/AGS.
SPA 151. First Year Spanish. 6 Credits.
Continues the work of SPA 150. Emphasizes active communication in Spanish.
Includes listening, speaking, reading, writing, pronunciation, structure, vocabulary and culture. Recommended: Completion of SPA 150 or instructor permission. Completion of SPA 150-151 is equivalent to SPA 101-102-103. 
Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. 
Audit available. This course fulfills the following GE requirements: Arts and Letters/AS, Arts and Letters/AAOT, 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/AAT, Arts and Letters/AS, Arts and Letters/AAOT, 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/AAT, Arts and Letters/AS, Arts and Letters/AAOT, 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/AAT, Arts and Letters/AS, Arts and Letters/AAOT, 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. Spanish for Heritage Speakers - 1st Term. 4 Credits.
Builds upon existing Spanish linguistic and cultural knowledge and experiences of Spanish heritage speakers. Develops accuracy and appropriate register for professional situations. Improves oral communication and writing skills, with strong emphasis in vocabulary enrichment and spelling. Addresses linguistic and cultural variation at the 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/AAT, Arts and Letters/AS, Arts and Letters/AAOT, Arts and Letters/AGS, Arts and Letters/ASOT-B.
SPA 218. Spanish for Heritage Speakers - 2nd Term. 4 Credits.
Continues to build upon existing Spanish linguistic and cultural knowledge and experiences of Spanish heritage speakers. Builds upon existing Spanish linguistic and cultural knowledge and experiences of Spanish heritage speakers. Continues to expand 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/AAT, Arts and Letters/AS, Arts and Letters/AAOT, Arts and Letters/AGS, Arts and Letters/ASOT-B.
SPA 219. Spanish for Heritage Speakers - 3rd Term. 4 Credits.
Continues to build upon existing Spanish linguistic and cultural knowledge and experiences of Spanish heritage speakers. Works on perfecting accuracy and appropriate register for professional situations. Improves oral communication and writing skills, with strong emphasis in vocabulary enrichment and spelling. Addresses linguistic and cultural variations within the Spanish-speaking world. Improves reading comprehension, reviews grammar terms, and practices translation. Recommended: For students who grew up in a Spanish-speaking household or community, who can speak in Spanish, and want to develop their writing, reading and conversational skills. Completion of SPA 218, or instructor permission. Students with other extensive prior experience are encouraged to contact the instructor before enrolling in the course. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAOT, Arts and Letters/AGS, Arts and Letters/ASOT-B.
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. 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/AAOT, 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/AAT, Arts and Letters/AS, Arts and Letters/AAOT, 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). Students with other extensive prior experience are encouraged to contact the instructor before enrolling in the course. Audit available. This course fulfills the following GE requirements: Arts and Letters/AAT, Arts and Letters/AS, Arts and Letters/AAOT, Arts and Letters/AGS, Arts and Letters/ASOT-B.
SP 260A. Hispanic Culture. 3 Credits.
SPA 260C. Spanish Culture. 1 Credit.
Hispanic culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subタイトル 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 subタイトル in the schedule when offered. Recommended: Completion of SPA 203, 251 or instructor permission. Audit available.

SPA 261C. Spanish Culture. 1 Credit.
Hispanic culture through reading, conversation, and writing. Conducted in Spanish. Specific regional and topical focus is subタイトル 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 through reading, conversation and writing. Focuses on characters and topics (subタイトル in the schedule). Conducted in Spanish or English (subタイトル 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 stories, novels and theater. Focuses on the Hispanic region, period and genre subタイトル 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.
Introduces literature written by women in Spanish. Includes reading literary essays, poetry, short stories, novels and/or theater by Spanish and Latin American women. Course is 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 subタイトル in the schedule. Conducted in Spanish or English (subタイトル in the schedule). Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

SPA 290A. 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.

SPA 292A. 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/AAT, Arts and Letters/AS, Arts and Letters/AGS, Arts and Letters/AGS-1.

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 theatre including practical hands-on experience in designing a set stage, construction, the set design and stage rigging. Lecture/lab format provides time for individualized projects. 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. The student knowledge of the fundamental aspects of technical theater leading to an understanding of an appreciation for the art of stagecraft. Students are required to do three hours of lab a week and participation in departmental productions presented that term. Prerequisite: MTH 20. Audit available.

TA 141. Fundamentals of Acting Techniques. 4 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/AAT, Arts and Letters/AGS, Arts and Letters/AGS-1.

TA 142. Fundamentals of Acting Techniques. 4 Credits.
Acquire concentration and relaxation in approaching a role. Improve performance skills with focus on vocal and physical control. Scene study is used. Prerequisite: TA 141 and its prerequisite requirements. Audit available.

TA 143. Fundamentals of Acting Techniques. 4 Credits.
Practice skills from TA 141 and TA 142. Strengthens 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 immersive 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.

TA 180C. Theater Rehearsal and Performance. 3 Credits.
Performance in theater production. Audition required. Audit available.

TA 190A. Projects in Theatre. 1 Credit.
Design an independent project associated with the theatre. Develop a contract with a theatre arts instructor covering the course content. May be repeated. Audit available.

TA 190B. Projects in Theatre. 2 Credits.
Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

TA 190C. Projects in Theatre. 3 Credits.
Develop a study contract emphasizing self-directed research, on an individualized basis allowing for maximum flexibility. May be repeated. Audit available.

TA 227. Stage Make-up. 3 Credits.
Techniques of applying stage makeup including use of tools and products. Focuses on analyzing the character and theater to create the best make-up for various roles on any given stage. Class time is divided into lecture and student make-up projects. Audit available.

TA 241. Intermediate Acting Technique. 4 Credits.
Concentrate on in-depth study of the skills introduced in first year acting. One-act plays will be assigned as projects. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

TA 242. Intermediate Acting Technique. 4 Credits.
Comedy characterization as a style of performance. Study and perform a variety of comic literature. Focuses on comedy techniques. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.
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.
Introduces medical records, admitting procedures, history taking, record maintenance for both in and out patients, and kennel records. Includes follow-up and discharge procedures, inventory control, and other maintenance files required by a veterinary hospital. Includes instruction on the use of veterinary hospital software for the computer. Prerequisite: Admission to Veterinary Technology program.

VT 104. Facility Ward Care. 2 Credits.
Introduces principles of daily animal husbandry, socialization, enrichment, and clinical care of animals housed in campus facilities. Explores teamwork, communication, veterinary technical skills, and principles of professionalism encountered in the daily operations of a multi-species veterinary facility. Prerequisites: Admission to Veterinary Technology program.

VT 105. Comparative Veterinary Anatomy and Physiology I. 4 Credits.
Covers the form and function of animal bodies and examines the anatomical and physiological differences between selected species. Includes a lab where skeletons and cadaver specimens are studied. Focuses on microscopic anatomy and anatomy and physiology of bones, muscles, and skin. Prerequisite: Admission to Veterinary Technology program.

VT 106. Comparative Veterinary Anatomy and Physiology II. 4 Credits.
Covers anatomical and physiological differences between selected species. Focuses on microscopic anatomy and anatomy and physiology of the digestive, nervous, urinary, reproductive, and endocrine systems. Includes the study of the special sense organs. Prerequisite: Admission to Veterinary Technology program.

VT 107. Veterinary Parasitology and Pathology. 3 Credits.
Introduces life cycles, modes of transmission, geographical distribution, and diseases associated with animal parasites. Includes parasite identification using prepared slides and collected specimens. Includes terms and processes involved in veterinary pathology, means and processes that result in disease, types of cells and tissues, and signs of inflammation. Prerequisite: Admission to Veterinary Technology program.

VT 108. Pharmaceutical Mathematics. 1. 1 Credit.
Introduces mathematics as applied to pharmacology. Includes unit conversions, solutions and percentage calculations, and drug dosage calculations. Prerequisite: Admission to Veterinary Technology program.

VT 109. Radiation Safety. 2 Credits.
Introduces x-radiation and safety principles involved in using x-ray machines. Program admission or current employment in a veterinary facility or clinic doing x-ray work is required. Prerequisite: Admission to Veterinary Technology program or instructor approval.

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: Admission to Veterinary Technology program.

VT 111. Hematology and Urinalysis. 5 Credits.
Covers the knowledge and skills necessary to perform hematology and urinalysis. Includes instruction for performing complete blood counts and urinalysis using current technology. Prerequisites: Admission to Veterinary Technology program.

VT 112. Clinical Laboratory Procedures. 5 Credits.
Covers the knowledge and skills necessary to perform 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. Prerequisite: Admission to Veterinary Technology program.

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, viruses, and protozoa. Students are introduced to the identification of bacterial and fungal organisms. Prerequisites: Admission to Veterinary Technology program.

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 201. Anesthesiology. 3 Credits.
Introduces basic anesthetic agents, the use and operation of anesthesia machines and monitoring equipment, monitoring and care of the anesthetized veterinary patient, and the pre-operative considerations and duties for both surgery and anesthesia. Prerequisites: Admission to Veterinary Technology program.

VT 202. Surgical Nursing and Laboratory Animal Procedures. 4 Credits.
Covers the preparation and monitoring of surgical patients, surgical assisting and aseptic technique, pre-operative and post-operative patient care, surgical instrument identification and methods of instrument sterilization, and the veterinary technician's role in special surgical procedures. Includes laboratory animal diseases and procedures. Prerequisite: Admission to Veterinary Technology program.

VT 203. Veterinary Procedures Seminar. 3 Credits.
Covers advanced and special topics in veterinary technician training, such as electrocardiography, exotic animal medicine, necropsy techniques, and various diagnostic and therapeutic procedures. Includes investigating, researching and reporting on topics of special interest. Prerequisite: Admission to Veterinary Technology program.

VT 204. Applied Radiography. 3 Credits.
Covers 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: Admission to Veterinary Technology program.
VT 205. Veterinary Pharmacology. 4 Credits.
Introduces general pharmacological principles, drugs, and classification of agents used in veterinary medicine. Covers therapeutic responses to drugs and common adverse drug reactions. Prerequisites: Admission to Veterinary Technology program.

VT 207. Public Health and Sanitation. 2 Credits.
Covers the principles of public health and sanitation as they apply to veterinary medicine and the veterinary technician. Emphasizes epidemiology, public health principles and regulations, zoonoses, and meat and food hygiene. Includes vaccine theory, immunology, vaccination protocols and handling of biologics. Prerequisites: Admission to Veterinary Technology program.

VT 208. Small Animal Diseases. 4 Credits.
Covers clinically important diseases and disease processes occurring in small animals. Includes the causes, pathogenesis, clinical signs, treatment and prevention of each disease. Prerequisites: Admission to Veterinary Technology program.

VT 209. Large Animal Diseases and Procedures. 3 Credits.
Covers the clinically important large animal diseases, disease processes, and obstetric procedures. Includes the causes, pathogenesis, clinical signs, treatment and prevention of each disease. Focuses on large animal diagnostic and treatment procedures in the laboratory section. Prerequisites: Admission to Veterinary Technology program.

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: Admission to Veterinary Technology program.

VT 211. Pharmaceutical Mathematics II. 1 Credit.
Continues mathematics as applied to pharmacology from Pharmaceutical Mathematics I. Reviews drug dosage calculations and solutions and percentages, then introduces more challenging problems. Includes fluid therapy and cancer chemotherapy problems and solutions. Prerequisite: Admission to Veterinary Technology program.

VT 280A. Cooperative Education: Clinic I. 4 Credits.
Provides an opportunity to work in a veterinary hospital or clinic. Focuses on office/receptionist skills, animal nursing and restraint, and laboratory procedures. Department permission required.

VT 280B. Cooperative Education: Clinic II. 4 Credits.
Provides an opportunity to work in a veterinary hospital or clinic. Focuses on office/receptionist skills, animal nursing and restraint laboratory procedures, pharmacology, radiography, surgical preparation and assistance and anesthesiology. Students may request to attend a special clinic, such as the Oregon Regional Primate Center, Oregon Health Science University, The College of Veterinary Medicine at Oregon State University, or a large animal or equine practice. Department permission required.

VT 280C. Cooperative Education: Clinic III. 4 Credits.
Provides an opportunity to work in a veterinary hospital or clinic. Focuses on office/receptionist skills, animal nursing and restraint laboratory procedures, pharmacology, radiography, surgical preparation and assistance and anesthesiology. Students may request to attend a special clinic, such as the Oregon Regional Primate Center, Oregon Health Science University, The College of Veterinary Medicine at Oregon State University, or a large animal or equine practice. Department permission required.

Welding

WLD 101. Welding Processes & Applications. 4 Credits.
Covers welding processes, safety, equipment, and essential variables of operation. Audit available.

WLD 102. Blueprint Reading. 4 Credits.
Covers the language of blueprints including lines, views, dimensioning, print organization, welding symbols and structural shapes. Prerequisites: WR 115, RD 115 and MTH 20 or equivalent placement test scores. Audit available.

WLD 111. Shielded Metal Arc Welding (E7024) and Oxy-acetylene Cutting. 4 Credits.
Covers uses, safety, nomenclature, equipment operation, set-up and shutdown procedures for SMAW and OAC. Prerequisite: Department permission required. Audit available.

WLD 112. Shielded Metal Arc Welding: Mild Steel I (E7018). 4 Credits.
Develops knowledge and skills in the use of E7018 mild steel electrodes when performing various welds in the flat, horizontal and vertical positions. Prerequisite: Department permission required. Audit available.

WLD 113. Shielded Metal Arc Welding: Mild Steel II (E7018). 4 Credits.
Develops knowledge and skills in the use of E7018 mild steel electrodes when performing various welds in the vertical and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 114. Shielded Metal Arc Welding: Mild Steel III (E6011). 4 Credits.
Develops knowledge and skills in the use of E6011 mild steel electrodes when performing various welds in the flat, horizontal and vertical positions. Prerequisite: Department approval required. Audit available.

WLD 115. Shielded Metal Arc Welding: Mild Steel IV (E6011). 4 Credits.
Develops knowledge and skills in the use of E6011 mild steel electrodes when performing verticals in the flat, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 116A. Beginning Shielded Metal Arc Welding. 3 Credits.
Introduces intermediate shielded metal arc welding process on mild steel plate in accordance with AWS D1.1 Structural Steel welding codes and to industry standards. Introduces welding in the 1F and 2F positions. First class in a four course sequence. Audit available.

WLD 116B. Basic Welding Practice. 3 Credits.
Introduces intermediate shielded metal arc welding practice on mild steel plate in accordance with AWS D1.1 Structural Steel welding codes and to industry standards. Introduces welding in the 3F and 4F positions. Second class in a four course sequence. Audit available.

WLD 127. Gas Metal Arc Welding. 5 Credits.
Develops welding knowledge and skills and sorting, cleaning, and joining of metal materials using short circuit and axial spray transfers in common welding positions. Prerequisite: Department permission required. Audit available.

WLD 128. Basic Gas Tungsten Arc Welding (Heliarc). 3 Credits.
Introduces gas tungsten arc welding and industry standards. Welds common joint configurations in the 1F and 2F positions. Develops foundational skills required for advancement in future course work. First class in a four course sequence. Audit available.

WLD 131. Gas Metal Arc Welding. 4 Credits.
Develops knowledge and skills welding with GMAW on ferrous materials using short circuit and axial spray transfers in common welding positions. Prerequisite: Department permission required. Audit available.

WLD 132. Gas Metal Arc Welding-Pulse. 4 Credits.
Develops knowledge and skills using the gas metal arc welding - pulse transfer process on common mild steel and aluminum joints in all positions. Prerequisite: Department permission required. Audit available.

WLD 136A. Beginning Wire Welding. 3 Credits.
Introduces common weld joint in the 1F and 2F positions. Develops foundational skills required for advancement in future coursework. First class in a four course sequence. Audit available.

WLD 136B. Basic Wire Welding. 3 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). 4 Credits.
Develops knowledge and skills in the gas shielded flux-cored arc welding process in the flat, vertical, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 142. Flux-Cored Arc Welding II (Self Shielding). 4 Credits.
Develops knowledge skills in the self-shielded flux cored arc welding process in the flat, vertical, horizontal and overhead positions. Prerequisite: 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 Welding Code. Second class in a four course sequence. Audit available.

WLD 151. SMAW Certification Practice: Unlimited Thickness Mild Steel. 4 Credits.
Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 Structural Welding Test with the E7018 electrode. Prerequisite: Department permission required. Audit available.

WLD 152. Flux Cored Arc Welding (Gas Shielded) Certification Practice. 4 Credits.
Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Prerequisite: Department permission required. Audit available.

WLD 153. Flux Cored Arc Welding (Self shielding) Cert. Practice. 4 Credits.
Covers safety, welding technique, and qualification procedures in compliance with AWS D1.1 structural test. Prerequisite: 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 cutting and 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 welding 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 176B. Basic Fabrication Welding Practice. 3 Credits.
Introduction to basic fabrication of welded structures. Develops foundational skills required for advancement. Second class in a three course sequence. Audit available.

WLD 186A. Beginning Certification Welding Practice. 3 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 basic knowledge and practice with a welding process and perform welding in accordance with industry standards. Develops foundational skills required for advancement in future coursework. Second class in a three course sequence. Audit available.

WLD 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. 3 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; AMT 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. 4 Credits.
Develops knowledge and skills in the use of a variety of welding electrodes when welding complex joints in advanced positions. Prerequisites: WLD 114, WLD 151, WLD 152, and 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 FCAW, GMAW, SMAW, CAC-A, OAW, TB, PAC and OAC processes. Prerequisite: Department permission required. Audit available.

WLD 221. Gas Tungsten Arc Welding Mild Steel. 4 Credits.
Develops knowledge and skills welding common joints in all positions on mild steel using the Gas Tungsten Arc Welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 222. Gas Tungsten Arc Welding: Aluminum. 4 Credits.
Develops knowledge and skills required to weld common joints in all positions on aluminum using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 223. Gas Tungsten Arc Welding: Stainless Steel. 4 Credits.
Develops knowledge and skills required to weld common joints in all positions on stainless steel using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 224. Gas Tungsten Arc Welding: (Mild Steel) Pipe I. 4 Credits.
Develops knowledge and skills in use of gas tungsten arc welding mild steel pipe in all positions using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 225. Gas Tungsten Arc Welding: (Mild Steel) Pipe II. 4 Credits.
Develops knowledge and skills required to weld two-inch diameter schedule 80 mild steel pipe in the 5G and 6G positions using the gas tungsten arc welding (GTAW) process. Prerequisite: Department permission required. Audit available.

WLD 226A. Intermediate Gas Tungsten Arc Welding (Heliscar). 3 Credits.
Introduces joining of plate using oxy-fuel welding. Second class in a four course sequence. Audit available.

WLD 226B. Advanced Gas Tungsten Arc Welding (Heliscar). 3 Credits.
Introduces joining of plate using oxy-fuel welding. Second class in a four course sequence. Audit available.

WLD 236A. Intermediate Wire Welding. 3 Credits.
Introduces gas tungsten arc welding on Stainless Steel to industry standards. Weld common joint configurations. Develops foundational skills required for advancement in future course work. Third class in a four course sequence. Audit available.

WLD 236B. Advanced Wire Welding. 3 Credits.
Introduces gas tungsten arc welding on Aluminum to industry standards. Weld common joint configurations. Develops foundational skills required for advancement in future course work. Fourth class in a four course sequence. Audit available.

WLD 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). 4 Credits.
Provides an opportunity to practice for the American Welding Society Mild Steel Certification tests using SMAW mild steel electrodes in the vertical, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 254. SMAW Certification Practice 3/8" Mild Steel (E7018). 4 Credits.
Provides an opportunity to practice for the American Welding Society Mild Steel Certification tests using SMAW low hydrogen electrodes in the vertical, horizontal and overhead positions. Prerequisite: Department permission required. Audit available.

WLD 256. Preparation for Pipe Certification I. 4 Credits.
Provides knowledge and skills in the use of melt-through procedures in preparation for pipe welding with the shielded metal arc process. Prerequisite: Department permission required. Audit available.

WLD 256A. Intermediate Oxy-Acetylene Welding Practice. 3 Credits.
Introduces the joining of plate using oxy-fuel welding. Third class in a four course sequence. Audit available.

WLD 256B. Advanced Oxy-Acetylene Welding Practice. 3 Credits.
Introduces the joining of plate using oxy-fuel welding. Fourth class in a four course sequence. Audit available.

WLD 257. Preparation for Pipe Certification II. 4 Credits.
Provides practice for pipe certification using the SMAW process to weld pipes in all positions. Prerequisite: Department permission required. Audit available.

WLD 258. Preparation for Downhill Pipe Certification I. 4 Credits.
Provides an opportunity to practice using the downhill SMAW process to weld pipes in the basic position (2G) for pipe certification. Prerequisite: Department permission required. Audit available.
WLD 259. Preparation for Downhill Pipe Certification II. 4 Credits. Provides an opportunity to practice using the downhill SMAW process to weld pipes in the advanced (5G and 6G) for pipe certification. Prerequisite: Department permission required. Audit available.

WLD 260. Beginning Fabrication. 4 Credits. Develops knowledge and skills in the selection and use of layout tools and equipment to assemble a beginning fabrication project from given specifications. Prerequisite: Department approval required. Audit available.

WLD 261. Basic Fabrication. 4 Credits. Develops knowledge and skills in the selection and use of layout tools and equipment to assemble a basic fabrication project from given specifications. Prerequisite: Department permission required. Audit available.

WLD 262. Intermediate Fabrication. 4 Credits. Develops knowledge and skills in the proper selection and safe use of hand tools and machinery while working on specific fabrication projects. Prerequisite: Department permission required. Audit available.

WLD 263. Welding Technology - Capstone. 4 Credits. Provides an opportunity to demonstrate readiness for welding employment through the development and performance of a comprehensive welding project and the successful completion of an industry based written assessment. Requires: Completion of One-Year Certificate in Welding Technology. Prerequisite: WLD 260, WLD 261 and department permission. Audit available.

WLD 266A. Intermediate Weld Practice Metal Sculpting. 3 Credits. Focuses on producing code quality welds as they apply to the fabrication of metal sculpture. Introduces AWSD1.1 welding code and visual inspection techniques. Third class in a four course sequence. Audit available.

WLD 266B. Advanced Weld Practice Metal Sculpting. 3 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 oxyacetylene 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. Prior welding experience is required. Audit available.

Womens 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/ AAOT, Social Sciences/AATOT, Arts and Letters/AS, Social Sciences/AS, Social Sciences/AGS, Arts and Letters/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

WS 201. Intercultural Women's Studies. 4 Credits. Examines the position of women in society from a cross-cultural perspective. Includes 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/AAOT, Social Sciences/AS, Social Sciences/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

WS 202. Women, Activism and Social Change. 4 Credits. 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 justice movements. Offers an in-depth look at selected topic areas, connects analysis and personal experience, and focuses on how to become an effective change agent. 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/AAS, Social Sciences/AGS, Social Sciences/ASOT-B.

Writing

WR 80. Writing 80. 3 Credits. Covers basic communication skills, language mechanics, grammar, spelling, sentence structure and paragraph development. Prerequisite: (ABE 0783 and ABE 0794), or ABE 0790, or (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 increase working vocabulary and improve skills in basic communication. 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. Instruction includes instruction in grammar, punctuation, sentence structure, essay development, and critical thinking skills. Improves basic writing skills by learning to use simple and complex sentences in developing a good essay, and by developing critical thinking skills that are used in the writing process. Prerequisites: Placement into WR 90 or completion of WR 80; Placement into RD 90 or completion of RD 80. Audit available.

WR 91. Basic Grammar. 1 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. 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. WR 91A and WR 91 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

WR 92. Basic Grammar. 2 Credits. Instruction in grammar including punctuation, sentence structure, and the writing process. This course is offered in a flexible schedule, lecture/lab format. WR 92A and WR 92 are equivalent. Only one may be taken for credit. Prerequisite: WR 80, RD 80 or equivalent placement test scores. Audit available.

WR 92A. Basic Grammar. 2 Credits. Instruction in grammar including punctuation, sentence structure, and the writing process. WR 92A and WR 92 are equivalent. Only one may be taken for credit. Prerequisite: WR 80 and RD 80 or equivalent placement test scores. Audit available.

WR 93. Basic Grammar. 3 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. 2 Credits.
Explores approaches to autobiographical writing required for completing scholarship applications. Covers responses to typical scholarship essay prompts. Develops scholarship essays through journaling and sharing essay drafts. Introduces the practice of revising and rewriting material in different ways to respond to different purposes and audiences. 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 both 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 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 original 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 original 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 practice analytical, critical, argumentative, and 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 PCC 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 I. 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 in-class conferences required. Prerequisites: WR 212, basic computer literacy, and intermediate word processing skills. Audit available.

WR 239. Creative Writing (Word & Image). 4 Credits.
Focuses on writing and designing work that incorporates both words and images. Explores the techniques, styles, and structures used by established writers and artists of the genre. Includes creating and revising work in a workshop setting. Prerequisites: WR 115 and RD 115 or equivalent placement test scores. 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, 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 WR 241 or WR 242 or WR 243. 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.
Focuses on writing short fiction for class discussion and analysis in a workshop setting. Explores the techniques, structures, and styles of established writers 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. Focuses on the writing and submitting of plays for class discussion and analysis. Includes writing and analysis of plays and screenplays by established writers, 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 introduction to the craft of fiction started in WR 241. Explores the creative writing process from development of an idea to revision of a manuscript. Introduces the techniques, structures, and styles of established writers. Prerequisites: WR 241 or instructor permission. Audit available. 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.
Emphasizes development of craft while introducing basics of editing others' manuscripts and preparing them for publication in a variety of forms, including an annual student literary magazine. May be repeated twice for credit. Prerequisites: WR 240 or WR 241 or WR 242 or WR 243 and (WR 244 or WR 245) 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. Includes lecture, small group activities, and conferences. Prerequisite: WR 243 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 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 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 246 or instructor permission. Audit available.

WR 280A. Cooperative Education: Writing and Publishing. 1-6 Credit.
Extends knowledge of writing, editing, publishing, and communications acquired in WR courses through volunteer and/or work time spent in settings that provide learning experiences in these areas. Prerequisite: WR 121 and department permission required.
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