LOWER COLUMBIA COLLEGE

The Smart Choice!

2014-15 CATALOG ADDENDUM
ACADEMIC POLICIES & RECORDS

While pursuing studies and joining in campus activities, there are things students need to know about LCC’s policies on grades and student records, academic and graduation requirements, and rights and responsibilities as a student. Knowing these rules will help students move smoothly through the college system.

Grades & Credits
At Lower Columbia College, students receive both letter and points-per-credit grades. Each credit class is offered for a predetermined number of credits, generally one credit per weekly contact hour of lecture or two weekly hours of laboratory contact. Points, or numerical values, are assigned to letter grades. At the end of each quarter, students receive both a letter grade and its corresponding number of points for each course in which they are enrolled. Courses receiving a grade of P (Pass), W (Withdraw), R (Retake), N (Audit), X (Expunged), I (Incomplete) or V (Instructor-Initiated Withdrawal) are not included in the GPA. Grades and their points are as follows:

- A  4.0 points per credit (exceptional performance)
- A-  3.7 points per credit
- B+  3.3 points per credit
- B  3.0 points per credit (above average performance)
- B-  2.7 points per credit
- C+  2.3 points per credit
- C  2.0 points per credit (average performance)
- C-  1.7 points per credit
- D+  1.3 points per credit
- D  1.0 points per credit (minimal performance)

Quarter grade point averages, called GPAs, are obtained by separately adding the student’s total course credits attempted and the number of points received for those courses. The total grade points earned are divided by the total GPA credit for which the student has enrolled. The resulting figure is the student’s grade point average for one quarter. Only credits earned in courses at LCC are used in computing a student’s grade point average.

Cumulative grade point averages are found by dividing total grade points earned by total credits attempted. To aid the student in understanding individual progress, mid-quarter grades are available from individual instructors. These are not recorded on a student’s permanent record.

Grade Forgiveness
A student returning to LCC after an absence of three or more years is eligible for grade forgiveness after completing at least 24 new credits at LCC, with a cumulative GPA of 2.5 or higher. Forgiveness applies only to courses taken before returning, and students can only use forgiveness once. Students must choose entire quarters (not individual courses) for grade forgiveness. The courses will remain on your transcript, but old grades will be replaced with an “X” for expunged and will not be figured into the GPA. Contact the Registration Office for more information.

Grade Report
Students may view their grades (unofficial transcripts) through the online student information via the LCC website, using Student ID Numbers and global PIN (personal identification number) available from the Registration Office. This unofficial transcript can be printed.

Audit
A student may audit any course for no credit upon payment of tuition and fees. Auditors are not required to take examinations, but may participate in course work. If you want to audit a class, you must register as an auditor. Registered students wishing to change to audit status must follow the procedure for change to audit registration, including obtaining the instructor’s written permission.

Senior citizens may audit courses at a reduced rate, on a space-available basis. Contact the Registration Office for details on the Senior Citizens’ Waiver Program.
Final Exams
The Final Exam schedule is included in the printed quarterly course schedule and available online. Search for ‘Final Exams’ at lowercolumbia.edu.

Evening classes meeting once a week will take their final exam at the regular class time during finals week. Evening classes meeting more than once a week will take the final exam at the regular class time on whichever day during finals week the class agrees upon.

Students are not required to take final exams for more than two classes on a single day. Students may petition the Vice President of Instruction for other final examination arrangements if such a conflict arises, after first contacting the instructor. Exam priorities shall be based on class meeting day order first, then meeting time.

Final exams will be administered on the day designated on the final exam schedule. If a deviation from the scheduled day is desired, approval must be obtained from the Vice President of Instruction. Time changes, unanimously approved by the class, are acceptable.

Full-Time/Part-Time Load
The College considers a full-time course load to be 12 or more credits in a regular quarter and 10 or more credits during summer quarter. Full-time status may be defined differently for other purposes, such as certain financial aid programs or assessment of fees.

Incompletes
An instructor may give a grade of Incomplete (I) if a student satisfactorily completes most but not all of the course objectives. An Incomplete must be completed within one year of when it was given (or less than one year if so specified by the instructor). The final grade will replace the Incomplete on the student’s transcript after the instructor submits it. Incompletes not completed within the year may result in an F.

Instructor-Initiated Withdrawal
Students who do not attend any of the class sessions during the first five instructional days of the quarter (i.e., are absent for all of the scheduled class meetings) and do not contact the instructor regarding the absence in person, by phone, or by email, may be administratively withdrawn by the class instructor. In these cases, students will receive a grade of V (vanished) for the course.

Pass/Fail Option
Students may choose the pass/fail grading option through the first 10 days of each quarter. Students must initiate this option by completing a form available in the Registration Office and submitting it to the Registration Office no later than the tenth day of the quarter in which the course is being taken. The decision to enroll on a pass/fail basis may be reversed by notifying the Registration Office in writing by the normal deadline to drop classes. Limitations on courses taken through the student-initiated pass/fail grading option include:

• A maximum of five credits per quarter may be taken pass/fail. A maximum of 15 “Pass” credits may be used toward completion of associate degree requirements.
• Courses taken pass/fail may not be used to satisfy the communications, quantitative skills, Core program, or distribution requirements for any associate degree at Lower Columbia College, except when a pass/fail class is required by a specific program.
• “Pass” grades are not computed in the grade point average.

Students should understand that other institutions may restrict the acceptance of “Pass” grades, or restrict pass/fail grading for major, minor, or professional courses. Some courses are only graded on a pass/fail basis. These courses are designated in the class schedule or college catalog.

Repeating a Course
Students may repeat courses. Normally, all grades for repeated courses are used in calculating the student’s grade point average, although the student earns credit toward graduation only once. You may repeat a course and have the original grade disregarded for grade point average calculation. These rules apply:

• A student must request the grade change for a course after the course has been repeated.
• Upon the student’s request for removal of an earlier grade, the retake grade will be entered and the original grade removed and replaced with an “R” grade by the Registration staff.
• If a student has taken a course more than once before applying for retake, the student selects which quarter’s grade will be removed.
• The retake policy may be used once for any individual course.
• Grade points for any course taken more than once, with the exception of the approved retake course, will be included in the grade point average.

A petition form for course retake requests is available from the Registration Office.

Academic Standards
Academic Standards Committee
The Academic Standards Committee includes faculty from each department, the Vice President for Student Success, and a student representative. The committee acts on student or faculty petitions to waive graduation requirements or to make course substitutions for graduation, and on student appeals of the following:

1. Sanctions imposed on students for alleged arbitrary and capricious application of academic standards; and
2. Application of academic policies or procedures by instructors.

Petition forms are available in the Registration Office and the Office of the Vice President for Student Success. Completed forms should be directed to the Secretary of the Academic Standards Committee, who is the Executive Assistant to the Vice President for Student Success.
Student Academic Grievance Policy
LCC’s Academic Grievance Policy protects freedom of expression and protects students from improper, arbitrary or capricious academic evaluation.

If a student believes they have been graded improperly and are unable to informally resolve the situation with the instructor, the student may file a formal grievance with the Vice President for Student Success. More information and a copy of the Student Academic Grievance Policy are available from the Office of Student Success, 360.442.2300 or online.

Academic Warning and Suspension
Poor grades may result in an academic warning that alerts the student to low scholarship status and encourages steps to improve performance. The academic warning and suspension policies are:

• Any student who receives a quarterly GPA below 2.0 for any quarter will be placed on Academic Warning.
• Any student with two consecutive quarterly GPA’s less than 2.0 and/or whose cumulative GPA is less than 2.0 will be on Academic Probation and may be required by the college to enroll in College Success or other courses as determined by the College to assist with academic success.
• Any student with three or more consecutive quarterly GPA’s less than 2.0 and/or whose cumulative GPA is less than 2.0 is subject to academic suspension of up to three academic quarters. Students who are academically suspended must petition for reinstatement to the Vice President for Student Success at least six weeks prior to the quarter in which the student would like to re-enter the College.

Petition forms are available at the Registration Office and the Office of the Vice President for Student Success. Completed forms should be directed to the Executive Assistant to the Vice President for Student Success. If readmitted, the student must enroll under whatever conditions the Vice President believes will help him or her to succeed.

Non-Traditional Credits
Course Waiver
A student may request to have a course requirement waived based on prior education or work experience. Waived courses and credits are not included in the student’s grade point average. Waived courses may be used to satisfy any graduation requirement but may not be accepted as part of the 24 required credits in residence. The student must pay the required fees after assessment has occurred. Transferability of waived courses is determined by the receiving institution. To read more about non-traditional credits, search for ‘non-traditional credits’ at lowercolumbia.edu.

Credit by Challenge
A student may request to challenge a course if he or she has previously taken courses and established a transcript record at LCC and believes that previous experience has provided the competencies essential for passing the course to be challenged. The student must enroll in the course and pay the required fees. Some courses may not be challenged. Courses and grades resulting from the challenge process will be posted to the student’s transcript record at the end of the quarter during which the exam is taken. To read more about non-traditional credits, search for ‘non-traditional credits’ at lowercolumbia.edu.

Credit for Professional Certificates or Training
A student may request to receive credit for specific industry training and certifications that have been pre-assessed by faculty for alignment with specific classes offered at LCC. Credit granted for professional certificates or training may be used to satisfy any graduation requirement but may not be accepted as part of the 24 required credits in residence. The student must pay the required fees after assessment has occurred. Transferability of credit granted by this method is determined by the receiving institution. To read the current list of approved industry certifications please search ‘non-traditional credits’ at lowercolumbia.edu.

Alternative Options for Earning Credits
Advanced Placement – General Examination
Lower Columbia College grants credit for completion of the College Board’s Advanced Placement examinations. Advanced Placement is a cooperative educational endeavor between secondary schools and colleges and universities. The program provides motivated high school students with the opportunity to take college-level courses in a high school setting. Students who participate in the program gain college-level skills and may also earn college credit. AP courses are taught by high school teachers, following course guidelines developed and published by the College Board. LCC grants credit in several subject areas for students who have obtained a qualifying score on the College Board Advanced Placement examinations. Exams are given by the Educational Testing Service at locations around the country. Students must submit an official copy of their AP scores to the Registration Office. Upon evaluation of the scores, the student will be notified about acceptable credits. Provisional credit for AP scores will be used for advising purposes. Official credit will be granted once the student has earned 12 credits at LCC and has a cumulative grade point average of 2.75 or higher. To read more about Advanced Placement, search for ‘advanced placement’ at lowercolumbia.edu.

College Level Examination Program
Credit will be granted for College Level Examination Program (CLEP) tests with a minimum score equivalent to the 35th percentile for General and Subject examinations. Subject examination credits will be granted as equivalent to credits earned in courses at LCC. Credit for Subject examination will not be granted when students have earned credit in equivalent courses. Subject and general examination credits may count toward satisfying distribution requirements for any Associate in Arts-Direct
**Graduation & Transfer**

**Applying for Graduation**

To receive a degree from LCC, students must apply for graduation through the Registration Office. Graduation applications are available online at lowercolumbia.edu/registration/graduation and at the Registration Office. A student should consult with an advisor to assure that all course work will be completed by the intended date of graduation, and return the completed application to the Registration Office by the quarterly deadline. It is recommended that students apply for graduation two quarters before they intend to graduate, so that any deficiencies may be identified and corrected. Students may graduate at the end of any quarter.

Commencement exercises are held in June each year. Students who have completed requirements during the past year may participate in the June commencement ceremony. Students eligible to graduate at the end of summer quarter, may—during the preceding spring quarter—apply for spring graduation and participate in Commencement, completing requirements through the Summer Completion Option.

Students may apply for graduation under the graduation requirements in effect at the time they first enrolled, provided the first enrollment year is within five years of the year of graduation.

**Transferring Credit**

LCC recognizes academic credits earned at other regionally accredited collegiate institutions that are essentially equivalent in academic level and nature to work offered at LCC. Credits earned at other regionally accredited collegiate institutions will become part of the students’ LCC permanent records if the student earned a C or better, however, the cumulative GPA will only be calculated using LCC courses. The College subscribes to the Statewide Policy on InterCollege Transfer and Articulation Among Washington Public Colleges and Universities, which is endorsed by the state’s public colleges and universities and the State Board for Community and Technical Colleges, and is adopted by the Washington Student Achievement Council. The policy deals with the rights and responsibilities of students and creates an appeal process in transfer credit disputes.

**Reciprocity Between 2-Year Colleges**

Washington community and technical colleges (CTCs) offer reciprocity to students transferring within the CTC system who are pursuing the Associate in Arts Direct Transfer Agreement degree or the Associate in Sciences – Transfer degree. Students who completed an individual course that met distribution degree requirements or fulfilled entire areas of their degree requirements at one college will be considered to have met those same requirements if they plan to complete the same degree when they transfer to another community or technical college in Washington. These degree requirements include Communication Skills, Quantitative Skills, and/or Distribution Area requirements. Students must initiate the review process and be prepared to provide necessary documentation. More information is available at the Registration Office.
Transfer Degrees
Washington State colleges and universities and many private colleges and out-of-state institutions recognize graduates of Lower Columbia College who have earned the Associate in Arts-Direct Transfer Agreement degree as satisfying most or all of their general education requirements and will normally grant junior standing on transfer. Some colleges require specific course patterns or courses, in addition to the basic Associate in Arts degree. For current information on LCC’s transfer agreements with other colleges, search for “Transfer Center” at lowercolumbia.edu or visit the Transfer Center.

Washington 45
A student who completes courses selected from the categories listed below will be able to transfer and apply up to 45 quarter credits toward general education requirement(s) at any other public, and most private, higher education institutions in the state.

First Year Transfer List
- Communications (5 credits)—ENGL& 101, ENGL& 102
- Quantitative and Symbolic Reasoning (5 credits)—MATH& 107, MATH& 148 or MATH& 151
- Humanities (10 credits in two different subject areas or disciplines)—PHIL& 101, MUSC& 105, DRMA& 101, HIST& 116
- Social Science (10 credits in two different subject areas or disciplines)—PSYC& 100, SOC& 101, POLS& 101, POLS& 202, HIST& 117
- Natural Sciences (10 credits in two different subject areas or disciplines)—BIOL& 100, BIOL& 160 w/ lab, ASTR& 101 with lab, CHEM& 110 with lab, CHEM& 121 with lab, CHEM& 161, CHEM& 162, GEOL& 101 with lab.
- Additional 5 credits in a different discipline can be taken from any category listed above.

For transfer purposes, a student must have a minimum grade of C or better (2.0 or above) in each course completed from this list. Students who transfer Washington 45 credits must still meet the transfer institution’s admission requirements and eventually satisfy all their general education requirements and their degree requirements in major, minor and professional programs.

Student Records

Unofficial Transcripts

See Grade Report on the first page of the Academic Policy section.

Records Confidentiality

To respect the privacy rights of students, certain information is released only with the express written permission of the student. LCC’s records release policy complies with state and federal regulations.

Without the written consent of the student, the College shall not permit access to or the release of education records or personally identifiable information, except to:

1. College staff, faculty, and students when the information is required within the performance of their responsibilities to the College.
2. Federal and state officials in connection with the audit and evaluation of a federally or state-supported education program or with the enforcement of related legal requirements.
3. Agencies or individuals requesting information in connection with a student’s application for or receipt of, federal or state financial aid.
4. Researchers conducting studies for or on behalf of the College. Such studies will not permit the personal identification of students by other persons.
5. Accrediting organizations in order to carry out their accrediting functions.
6. Any person or entity designated by judicial order or lawfully issued subpoena, upon condition that the student is notified of all such orders or subpoenas in advance of the compliance therewith.

Directory Information, News and Photos—LCC may release the following for publication without the student’s written permission: (1) name, (2) field of study, (3) dates of attendance, full or part-time status, and alumni information, (4) degrees and awards, including academic awards, (5) the name and major of scholarship recipients, (6) the names of graduates of the college, (7) the names and qualifications of students receiving various honors, (8) sport, high school, height and weight of student athletes, (9) the names and activity of students participating in public performance events, and (10) images and pictures taken of students in the course of activities associated with the College.

If you choose to have Lower Columbia College NOT release your directory information, notify the Registrar in writing by using the form available in the Registration Office. You should be aware that asking Lower Columbia College to withhold directory information may prevent other colleges and employers from receiving information that might be to your advantage.

Release of Information in Emergencies—Necessary student information may be released in connection with an emergency and/or to protect the health and safety of a student or other persons. Definition of an “emergency” is determined by the Registrar.
DISTRIBUTION LISTS

This addendum contains the distribution lists for academic year 2014-15, including:

- Diversity requirement distribution list
- Distribution list for Transfer programs
- Distribution list for Professional-Technical programs
# Diversity Course List

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 109</td>
<td>American Cultural Diversity</td>
</tr>
<tr>
<td>ANTH&amp; 206</td>
<td>Cultural Anthropology</td>
</tr>
<tr>
<td>ART&amp; 100</td>
<td>Art Appreciation</td>
</tr>
<tr>
<td>ART 206</td>
<td>Arts of the Americas</td>
</tr>
<tr>
<td>ART 207</td>
<td>Arts of the World</td>
</tr>
<tr>
<td>ART 208</td>
<td>Arts of the Northwest</td>
</tr>
<tr>
<td>ART 228</td>
<td>History of Western Art</td>
</tr>
<tr>
<td>ASL&amp; 123</td>
<td>American Sign Language III:DIV</td>
</tr>
<tr>
<td>BUS 144</td>
<td>Management of Human Relations</td>
</tr>
<tr>
<td>CHIN&amp; 121</td>
<td>Chinese I</td>
</tr>
<tr>
<td>CHIN&amp; 122</td>
<td>Chinese II</td>
</tr>
<tr>
<td>CHIN&amp; 123</td>
<td>Chinese III</td>
</tr>
<tr>
<td>EDUC&amp; 205</td>
<td>Introduction to Education w/Field Experience</td>
</tr>
<tr>
<td>ENGL 140</td>
<td>Intro to Women Writers</td>
</tr>
<tr>
<td>ENGL 246</td>
<td>Rainbow Readers: LGBTQ Literature</td>
</tr>
<tr>
<td>ENGL 280</td>
<td>Multicultural Literature</td>
</tr>
<tr>
<td>ENVS 150</td>
<td>Environment and Society</td>
</tr>
<tr>
<td>HIST&amp; 126</td>
<td>World Civilization I</td>
</tr>
<tr>
<td>HIST&amp; 127</td>
<td>World Civilization II</td>
</tr>
<tr>
<td>HIST&amp; 128</td>
<td>World Civilization III</td>
</tr>
<tr>
<td>HIST 205</td>
<td>History of East Asia</td>
</tr>
<tr>
<td>HIST&amp; 215</td>
<td>Women in U.S. History</td>
</tr>
<tr>
<td>HUM 164</td>
<td>Cultural Journeys</td>
</tr>
<tr>
<td>HUM 210</td>
<td>Myths and Rites</td>
</tr>
<tr>
<td>MUSC 117</td>
<td>Music Cultures of the World</td>
</tr>
<tr>
<td>MUSC 119</td>
<td>American Music</td>
</tr>
<tr>
<td>MUSC 209</td>
<td>The Blues Culture</td>
</tr>
<tr>
<td>SOC&amp; 101</td>
<td>Introduction to Sociology (Includes WAOL’s SOC&amp; 101)</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Race and Ethnicity</td>
</tr>
<tr>
<td>SPAN&amp; 121</td>
<td>Spanish I</td>
</tr>
<tr>
<td>SPAN&amp; 122</td>
<td>Spanish II</td>
</tr>
<tr>
<td>SPAN&amp; 123</td>
<td>Spanish III</td>
</tr>
<tr>
<td>SPCH 109</td>
<td>Intercultural Communication</td>
</tr>
<tr>
<td>SPCH 209</td>
<td>Rhetorical Criticism and Popular Culture</td>
</tr>
</tbody>
</table>

Revised November 14, 2014
### Humanities

15 credits from at least 3 disciplines; no more than 5 credits in Performance Skills courses. No more than 5 credits in foreign language at the 100 level. If SPCH 110 and/or SPCH 114 are used to satisfy the Humanities requirement, they may not be used to satisfy the Communications Skills requirement.

**Performance Skills Courses/max 5 cr.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART&amp; 100</td>
<td>(was ART 110), and ART 101*, 102*, 103*, 106*, 107*, 108*, 111*, 112*, 113*, 155* (was 151A), 154* (was 151B), 156* (was 152A), 157* (was 152B), 158* (was 153), 206, 207, 208, 226, 227, 228, 241*, 242*, 243*</td>
</tr>
<tr>
<td>ASL&amp; 121, 122, 123</td>
<td></td>
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<tr>
<td>CHIN&amp; 121, 122, 123</td>
<td></td>
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<tr>
<td>DANCE 100*, 105*, 110*, 115*, 153*, 251*, 252*, 253*</td>
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</tr>
<tr>
<td>DRMA&amp; 101</td>
<td>(was DRAM 100), and DRMA 106*, 107*, 108*</td>
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<tr>
<td>ENGL 108, 124*, 125*, 126*, 140, 204, 205, 224*, 225*, 226*, 231, 232, 233, 234, 245, 246, 251, 252, 254, 255, 256, 260, 270, 280, ENGL&amp; 235</td>
<td>(was ENGL/ENGR 220), ENGL&amp; 244</td>
</tr>
<tr>
<td>HIST&amp; 116</td>
<td>(was HIST 106), HIST&amp; 126</td>
</tr>
<tr>
<td>HUM</td>
<td>(was HUMN) 104, 107, HUM&amp; 116, 117, 118, and HUM 164, 210, 220, 230</td>
</tr>
<tr>
<td>PHIL&amp; 101</td>
<td>(was PHIL 200), and PHIL 210, 260</td>
</tr>
<tr>
<td>SPAN&amp; 121, 122, 123, 221, 222, 223</td>
<td>(was SPAN 101, 102, 103, 201, 202, 203), and SPAN 110 or 114</td>
</tr>
<tr>
<td>SPCH 104, 109, 110, 114, 209</td>
<td></td>
</tr>
</tbody>
</table>

### Natural Sciences

15 credits from at least 3 disciplines; must include 5 credits of lab courses. No more than 5 credits from Mathematics, and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

**Note:** BUS 206 and MATH 210 are the same course. Credit cannot be earned for both.

**Lab Courses**

<table>
<thead>
<tr>
<th>Physical Sciences</th>
<th>Biological Sciences</th>
<th>Earth Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 110**</td>
<td>(was CHEM 105), CHEM&amp; 121**, 131**</td>
<td>(was CHEM 111**, 112**)</td>
</tr>
<tr>
<td>CHEM&amp; 161**, 162**, 163**</td>
<td>(was 151**, 152**, 153**), 261**, 262**, 263**</td>
<td>(was 251**, 252**, 253**)</td>
</tr>
<tr>
<td>CHEM 231**</td>
<td>PHYS&amp; 100**</td>
<td></td>
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<tr>
<td>PHYS&amp; 114**</td>
<td>(was PHYS 101**), 115**</td>
<td>(was PHYS 102**), 116**</td>
</tr>
<tr>
<td>PHYS* 210, PHYS&amp; 221**</td>
<td>(was PHYS 251**), 222**</td>
<td>(was PHYS 252**), and 223**</td>
</tr>
<tr>
<td>PHSC 108**, 109**</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>BUS 206, 207</td>
<td>(was BSAD 206, 207)</td>
<td></td>
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<tr>
<td>ENGR 106, 210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH&amp; 107</td>
<td>(was MATH 130), MATH&amp; 132</td>
<td>(was MATH 122), MATH&amp; 148</td>
</tr>
</tbody>
</table>
Social Sciences
15 credits from at least 3 disciplines.

ANTH 109, ANTH& 206 (was ANTH 207)
BUS& 101 (was BSAD 110), BUS& 201 (was BSAD 251)
CDS 101
CJ& 101 (was ADMJ 186)
ECON 104 and 105 or ECON& 201 (was ECON 205), ECON 105 or ECON& 202 (was ECON 206)
HIST& 117 (was HIST 107), HIST& 127 (was HIST 117), HIST& 128 (was HIST 118), HIST& 136 (was HIST 156), HIST&
137 (was HIST 157), HIST& 215, and HIST 205, 214, 254
POLS& 101, POLS& 202 (was POLS 106), POLS& 203 (was POLS 108), POLS& 204 (was POLS 107)
PSYC& 100 (was PSYC 111), PSYC& 200 (was PSYC 205), PSYC 204, 214, and 220
SOC& 101 (was SOCY 110), SOC 210, and 225

1 No more than 10 credits from any one discipline will be applied to the requirements within a distribution
area.

Restricted Course List
A maximum of 15 credits taken from the “Restricted Course List” may be used in the Associate in Arts (AA-DTA) degree.
Waived courses are subject to the 15-credit maximum. **No more than 3 PHED activity credits may be taken as electives.

ACCT 101, 150, 241, 244, 260
AH – all courses
AMTC – all courses
APPEL – all courses
BLPT – all courses
BUS 104 (was BSAD 104), BUS 119 (was BSAD 190), BUS 165 (was BSAD 115), BUS 259 (was BSAD 111), BUS 294
BTEC – all courses
CDS – all courses except CDS 101
CS – 102, 104, 111, 122, 141, 142, 212, 213, 249
COLL – all courses
DHET – all courses
DRFT – all courses
ECED – all courses except ECED& 132 (was ECED 105), ECED& 107 (was ECED 115), 180, 204, 220
EDUC – all courses except 150, 205
ENGL 100, 104
FISC – all courses
HLTH 100
HOFL – all courses
HDEV – all courses
LIBR – all courses
MASP – all courses
MATH 105, 106
MEDA – all courses
MFG – all courses
MUSC 115, 131, 132, 133, 161, 162, 163, 231, 232, 233, 261, 262, 263
NURS – all courses
**PHED – 104, 105, 106, 110, 120, 125, 127, 128, 130, 139, 152, 204, 205, 210, 215, 216, 220, 227, 228, 230, 252
PMFG – all courses
TECH – 100, 170
WELD – all courses

Revised November 14, 2014 effective fall 2014
Human Relations

Courses that meet the Human Relations requirement may also be used to satisfy another requirement of the degree.

ANTH& 206 (was ANTH 207)
BUS 144 (was BSAD 126), BUS 150 (was BSAD 164), BUS 240
CDS 102, 215
EDUC& 115, 130
HDEV 110
NURS 101, 202
PSYC& 100 (was PSYC 111), PSYC 204, 214
SOC& 101 (was SOCY 110)
SPCH 104

NOTE for Humanities, Natural Sciences, and Social Sciences:

10 credits. At least 5 credits each in two of the three areas.

Humanities

*Performance Skills Courses/max 5 cr.
ART& 100 (was ART 110), and ART 101*, 102*, 103*, 106*, 107*, 108*, 111*, 112*, 113*, 155* (was 151A), 154* (was 151B), 156* (was 152A), 157* (was 152B), 158* (was 153), 206, 207, 208, 226, 227, 228, 241*, 242*, 243*
ASL& 121, 122, 123
CHIN& 121, 122, 123
DANCE 100*, 105*, 110*, 151*, 152*, 153*, 251*, 252*, 253*
DRMA& 101 (was DRAM 100), and DRMA 106*, 107*, 108*
ENGL 108, 124*, 125*, 126*, 140, 204, 205, 224*, 225*, 226*, 231, 232, 233, 234, 245, 251, 252, 254, 255, 256, 260, 270, 280, ENGL& 102, ENGL& 235 (was ENGL/ENGR 220), ENGL& 244 (was 240)
HIST& 116 (was HIST 106), HIST& 126 (was HIST 116)
HUM (was HUMN) 104, 107, HUM& 116, 117, 118, and HUM 164, 210, 220, 230
PHIL& 101 (was PHIL 200), and PHIL 210, 260
SPAN& 121, 122, 123, 221, 222, 223 (was SPAN 101, 102, 103, 201, 202, 203), and SPAN 110 or 114
SPCH 104, 109, 110, 114, 209

Revised November 06, 2014, effective fall 2014
**Natural Sciences**
15 credits from at least 3 disciplines; must include 5 credits of lab courses. No more than 5 credits from Mathematics, and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

**Note:** BUS 206 and MATH 210 are the same course. Credit cannot be earned for both.

**Lab Courses**

<table>
<thead>
<tr>
<th>Physical Sciences</th>
<th>Biological Sciences</th>
<th>Earth Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM &amp; 100</td>
<td>ANTH &amp; 205 (was ANTH 206)</td>
<td>ASTR &amp; 101** (was ASTR 110)</td>
</tr>
<tr>
<td>CHEM &amp; 110** (was CHEM 105), CHEM &amp; 121**, 131**: (was CHEM 111**, 112**), CHEM &amp; 161**, 162**, 163**: (was 151**, 152**, 153**), 261**, 262**, 263**: (was 251**, 252**, 253**), and CHEM 231**</td>
<td>BIOL &amp; 100**, BIOL &amp; 160**, BIOL &amp; 170 (was BIOL 120), BIOL &amp; 211**, 212**, 213**: (was BIOL 201, 202, 203), BIOL &amp; 241**: (was BIOL 221), BIOL &amp; 242**: (was BIOL 222), BIOL &amp; 260**: (was BIOL 257), BIOL 109**, 130**, 150**</td>
<td>物理科学</td>
</tr>
<tr>
<td>PHYS &amp; 100**, PHYS &amp; 114**: (was PHYS 101**), 115**: (was PHYS 102**), 116**: (was PHYS 103**), PHYS 210, PHYS &amp; 221**: (was PHYS 251**), 222**: (was PHYS 252**), and 223**: (was PHYS 253**)</td>
<td>NUTR &amp; 101 (was CHEM 120)</td>
<td></td>
</tr>
<tr>
<td>BUS &amp; 206, 207 (was BSAD 206, 207)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGR 106, 210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH &amp; 107 (was MATH 130), MATH &amp; 132 (was MATH 122), MATH &amp; 148 (was MATH 140), MATH &amp; 151, 152, 153, and MATH &amp; 141 (was MATH 112), MATH &amp; 142 (was MATH 113), 125, 254 (was MATH 154), 210, 211, 220, 240</td>
<td></td>
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<tr>
<td>MFG 130</td>
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<tr>
<td>TECH 100</td>
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</tr>
<tr>
<td><strong>Lab Course</strong></td>
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</tbody>
</table>

**Social Sciences**

<table>
<thead>
<tr>
<th>Physical Sciences</th>
<th>Biological Sciences</th>
<th>Earth Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 109, ANTH &amp; 206 (was ANTH 207)</td>
<td>ECO &amp; 205, 209 (was ECON 208), ECO &amp; 210 (was ECON 209), ECO &amp; 220 (was ECON 220)</td>
<td>ASTR &amp; 101** (was ASTR 110)</td>
</tr>
<tr>
<td>BUS &amp; 101 (was BSAD 110), BUS &amp; 144 (DIV), BUS &amp; 201 (was BSAD 251)</td>
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<tr>
<td>CDS 101</td>
<td></td>
<td></td>
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<tr>
<td>CJ &amp; 101 (was ADMJ 186)</td>
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<td></td>
</tr>
<tr>
<td>ECO &amp; 104 and 105 or ECO &amp; 201 (was ECON 205), ECO &amp; 105 or ECO &amp; 202 (was ECON 206)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIST &amp; 117 (was HIST 107), HIST &amp; 127 (was HIST 117), HIST &amp; 128 (was HIST 118), HIST &amp; 136 (was HIST 156), HIST &amp; 137 (was HIST 157), HIST &amp; 215, and HIST 205, 214, 254</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLS &amp; 101, POLS &amp; 202 (was POLS 106), POLS &amp; 203 (was POLS 108), POLS &amp; 204 (was POLS 107)</td>
<td></td>
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<tr>
<td>PSYC &amp; 100 (was PSYC 111), PSYC &amp; 200 (was PSYC 205), PSYC 204, 214, and 220</td>
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<tr>
<td>SOC &amp; 101 (was SOCY 110), SOC 210, and 225</td>
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**Lab Courses**

<table>
<thead>
<tr>
<th>Physical Sciences</th>
<th>Biological Sciences</th>
<th>Earth Sciences</th>
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</thead>
<tbody>
<tr>
<td>CHEM &amp; 100</td>
<td>ANTH &amp; 205 (was ANTH 206)</td>
<td>ASTR &amp; 101** (was ASTR 110)</td>
</tr>
<tr>
<td>CHEM &amp; 110** (was CHEM 105), CHEM &amp; 121**, 131**: (was CHEM 111**, 112**), CHEM &amp; 161**, 162**, 163**: (was 151**, 152**, 153**), 261**, 262**, 263**: (was 251**, 252**, 253**), and CHEM 231**</td>
<td>BIOL &amp; 100**, BIOL &amp; 160**, BIOL &amp; 170 (was BIOL 120), BIOL &amp; 211**, 212**, 213**: (was BIOL 201, 202, 203), BIOL &amp; 241**: (was BIOL 221), BIOL &amp; 242**: (was BIOL 222), BIOL &amp; 260**: (was BIOL 257), BIOL 109**, 130**, 150**</td>
<td>物理科学</td>
</tr>
<tr>
<td>PHYS &amp; 100**, PHYS &amp; 114**: (was PHYS 101**), 115**: (was PHYS 102**), 116**: (was PHYS 103**), PHYS 210, PHYS &amp; 221**: (was PHYS 251**), 222**: (was PHYS 252**), and 223**: (was PHYS 253**)</td>
<td>NUTR &amp; 101 (was CHEM 120)</td>
<td></td>
</tr>
<tr>
<td>BUS &amp; 206, 207 (was BSAD 206, 207)</td>
<td></td>
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<tr>
<td>ENGR 106, 210</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH &amp; 107 (was MATH 130), MATH &amp; 132 (was MATH 122), MATH &amp; 148 (was MATH 140), MATH &amp; 151, 152, 153, and MATH &amp; 141 (was MATH 112), MATH &amp; 142 (was MATH 113), 125, 254 (was MATH 154), 210, 211, 220, 240</td>
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<tr>
<td>MFG 130</td>
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<td></td>
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<tr>
<td>TECH 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lab Course</strong></td>
<td></td>
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</tr>
</tbody>
</table>
PROGRAMS OF STUDY

This addendum contains the programs of study, sometimes called program planners, for LCC’s degree and certificate programs for academic year 2014-15. These programs are intended to help prepare students for careers in high-demand fields, transfer to baccalaureate programs, earn associate degrees, or obtain specialized certificates. For non-degree professional development see Corporate and Continuing Education.

This page contains degree and certificate requirements only. For more information including advising/planning tools for each program, please visit our Programs of Study webpage.
Associate in Applied Science

ACCOUNTING TECHNICIAN

Accounting is a critical business function offering many career opportunities. Learn basic skills for entry-level accounting positions such as accounting technician, accounts payable and accounts receivable in private industry, state and local government, and public accounting. You can also begin studies for a bachelor’s degree by completing transferable accounting courses and general education requirements. Students must pass each course listed in Program Requirements with a ‘C’ or above.

Degree Requirements

To earn an Associate in Applied Science - Accounting Technician degree, you must complete a minimum of 91 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 5 credits - ENGL 101 English Composition I OR BUS 119 Business Communications.

Quantitative Skills: 8 credits – MATH 088 or higher AND BUS 104 (Business Math).


Humanities or Natural Sciences: 5 credits – from the distribution list for Professional/Technical degrees.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>Intro to Accounting Concepts</td>
<td>5</td>
</tr>
<tr>
<td>ACCT 150</td>
<td>Payroll Accting/Bus Tax Reporting</td>
<td>5</td>
</tr>
<tr>
<td>ACCT &amp; 201</td>
<td>Principles of Accounting I</td>
<td>5</td>
</tr>
<tr>
<td>ACCT &amp; 202</td>
<td>Principles of Accounting II</td>
<td>5</td>
</tr>
<tr>
<td>ACCT &amp; 203</td>
<td>Principles of Accounting III</td>
<td>5</td>
</tr>
<tr>
<td>ACCT 241</td>
<td>Intro to QuickBooks</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 244</td>
<td>Individual Income Taxation</td>
<td>5</td>
</tr>
<tr>
<td>ACCT 260</td>
<td>Certified Bookkeeper Prep</td>
<td>5</td>
</tr>
<tr>
<td>ACCT 288/289</td>
<td>Cooperative Education</td>
<td>5</td>
</tr>
<tr>
<td>BUS &amp; 101</td>
<td>Intro to Business</td>
<td>5</td>
</tr>
<tr>
<td>ECON &amp; 201</td>
<td>Micro Economics</td>
<td>5</td>
</tr>
<tr>
<td>ECON 105</td>
<td>Intro to Economics</td>
<td></td>
</tr>
<tr>
<td>BTEC 130</td>
<td>Electronic Calculators</td>
<td>1</td>
</tr>
<tr>
<td>BUS &amp; 201</td>
<td>Business Law</td>
<td>5</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputers</td>
<td>3</td>
</tr>
<tr>
<td>CS 121</td>
<td>Intro to Spreadsheets</td>
<td>5</td>
</tr>
<tr>
<td>CS 130</td>
<td>Intro to Database Applications</td>
<td>5</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Customer Service/Management</td>
<td></td>
</tr>
<tr>
<td>ECON &amp; 202</td>
<td>Macro Economics</td>
<td></td>
</tr>
<tr>
<td>SPCH 114</td>
<td>Small Group Communications</td>
<td></td>
</tr>
</tbody>
</table>

One of the following 5 credit courses may be substituted for ACCT 288/289 with program advisor, (Jim Stanley), permission:

- BUS 150
- ECON & 202
- CS 110
- CS 121
- CS 130

Total credits required to earn this degree: 91

Students completing this program should acquire the following skills and abilities:

- Demonstrate competency in performing all steps in the accounting cycle and payroll processing.
- Display effective problem solving and decision-making skills.
- Demonstrate proficiency in the utilization of QuickBooks, Microsoft-Access and Microsoft-Excel.
- Understand the commitment to lifelong learning required of those in the accounting profession.
- Apply the use of customer service skills in business environments.
- Demonstrate familiarity with Contract Law and the Uniform Commercial Code.
Associate in Applied Science - Transfer

ACCOUNTING TECHNICIAN
to The Evergreen State College

Accounting is a critical business function offering many career opportunities. Learn basic skills for entry-level accounting positions such as accounting technician, accounts payable and accounts receivable in private industry, state and local government, and public accounting. You can also begin studies for a bachelor’s degree by completing transferable accounting courses and general education requirements.

Degree Requirements

To earn an Associate in Applied Science – Transfer Accounting Technician degree, you must complete a minimum of **91 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 5 credits - ENGL 101 English Composition I

**Quantitative Skills:** 5 credits MATH& 141 Precalculus I

**Human Relations/Diversity:** 5 credits – BUS 144 Management of Human Relations:DIV.

**Humanities:** 5 credits – from the **distribution list for Professional/Technical degrees**.

**Natural Sciences:** 5 credits – from the **distribution list for Professional/Technical degrees**.

**Social Science:** 5 credits – BUS& 201 Business Law

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACCT 101</td>
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<td>ACCT&amp; 201</td>
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<td>Principles of Accounting III</td>
<td>5</td>
</tr>
<tr>
<td>ACCT 241</td>
<td>Intro to QuickBooks</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 288/289</td>
<td>Cooperative Education</td>
<td>5</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Customer Service/Management</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 130</td>
<td>Electronic Calculators</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 145</td>
<td>Intro to MS Word</td>
<td>3</td>
</tr>
<tr>
<td>CS 111</td>
<td>Intro to Windows</td>
<td>4</td>
</tr>
<tr>
<td>CS 121</td>
<td>Intro to Spreadsheets</td>
<td>5</td>
</tr>
<tr>
<td>CS 130</td>
<td>Intro to Database Applications</td>
<td>5</td>
</tr>
<tr>
<td>HLTH 100</td>
<td>Occupational Safety &amp; Health</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this degree:** 91

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Demonstrate competency in performing all steps in the accounting cycle and payroll processing.
- Display effective problem solving and decision-making skills.
- Demonstrate proficiency in the utilization of QuickBooks, Microsoft-Access and Microsoft-Excel.
- Understand the commitment to lifelong learning required of those in the accounting profession.
- Apply the use of customer service skills in business environments.
- Demonstrate familiarity with Contract Law and the Uniform Commercial Code.
Certificate of Completion

COMMUNITY, HEALTH, AND WELLNESS ADVOCATE

The Community, Health, and Wellness Advocate is a multi-skilled care manager who helps the patient navigate the complex maze of health and social service providers to find appropriate care. The Health and Wellness advocate educates patients and family members about healthy behaviors, helps to monitor compliance with care management plans, and can accompany patients on their healthcare appointments. Health and Wellness Advocates are required to have a wide-ranging skill set and knowledge base. They must develop on-going relationships with their patients to develop mutual trust. This requires grounding in medical ethics and professionalism. They have to recognize health, mental health, drug abuse, and social factors that affect their patients. The Health and Wellness Advocate must be familiar with the appropriate local, state, regional, and national agencies available to assist the patient. They will have to understand health information systems and healthcare funding.

Certificate Requirements

To earn a Community Health and Wellness Advocate Certificate of Completion, you must complete a minimum of 19 credits and pass each course listed in the program requirements with a C or above. The credits must include the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Apps</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 164</td>
<td>Legal Aspects of the Medical office</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 165</td>
<td>Cultural Awareness in Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 181</td>
<td>Medical Terminology I - OR -</td>
<td></td>
</tr>
<tr>
<td>MEDA 101</td>
<td>Medical Vocabulary I</td>
<td>3</td>
</tr>
<tr>
<td>CDS 108</td>
<td>Comm &amp; School Based Prev/Interv</td>
<td>4</td>
</tr>
<tr>
<td>HLTH 105</td>
<td>First Aid/CPR/BB Pathogen</td>
<td>1</td>
</tr>
<tr>
<td>AH 104</td>
<td>Healthcare Foundations</td>
<td>2</td>
</tr>
<tr>
<td>AH 114</td>
<td>Healthcare Communication Skills</td>
<td>2</td>
</tr>
</tbody>
</table>

Additional Non-Credit Requirements

- Mental Health First Aid 0.8 CEU

Total credits required to earn this certificate: 19

Students completing this program should acquire the following skills and abilities:

- Utilize a clinical decision support tool and electronic health records to view cross-system health and social service utilization to identify care opportunities
- Provide in-person client health assessments
- Accompany the client to critical appointments
- Engage the client in developing a health action plan
- Coordinate and mobilize treating/authorizing entities as necessary to reinforce and support the client’s health action goals
- Deliver culturally appropriate interventions, educational and informational materials
Certificate of Completion

HEALTH OCCUPATIONS CORE
For the HEALTHCARE WORKER

The Health Occupations program provides training for entry-level healthcare employees. The National Healthcare Foundation Skills Standards for the Core Curriculum will be met. Once you have satisfactorily completed the program with experience and produced a portfolio per requirements, you may take the National Health Science Assessment and be certified by The National Consortium on Health Science and Technology Education and the National Occupational Competency Testing Institute.

Certificate Requirements

To earn a Health Occupations Core for the Healthcare Worker Certificate of Completion, you must complete a minimum of 11 credits. The credits must include the following:

(Concurrent enrollment in AH 100 and HLTH 100)

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 100</td>
<td>Bloodborne Pathogens and Infection Control</td>
<td>1</td>
</tr>
<tr>
<td>HLTH 100</td>
<td>Occupational Safety and Health</td>
<td>3</td>
</tr>
<tr>
<td>AH 104</td>
<td>Healthcare Foundations</td>
<td>2</td>
</tr>
<tr>
<td>AH 114</td>
<td>Healthcare Communication Skills</td>
<td>2</td>
</tr>
<tr>
<td>MEDA 101</td>
<td>Medical Vocabulary I</td>
<td>3</td>
</tr>
</tbody>
</table>

If no previous healthcare work experience, may include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICP 288</td>
<td>Co-op Work Experience</td>
<td>1</td>
</tr>
<tr>
<td>ICP 289</td>
<td>Employment Portfolio Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Notes: Prior to taking ICP 288 and 289 you need to meet the requirements for LCC students assigned to health care agencies, which include:
1. A background check
2. Up-to-date immunizations and TB records
   (Forms are available from Nursing and Allied Health)

Total credits required to earn this certificate: 11

Students completing this program should acquire the following skills and abilities:

- Discuss significant historical events and funding sources in the U.S. health care system.
- Understand various health career options and academic preparation required for them.
- Be aware of malpractice and liability issues in health careers.
- Understand cultural and linguistic needs and services available to clients.
- Recognize pertinent regulatory guidelines including OSHA standards.
- Use problem solving skills in selected health care situations.
ANTHROPOLOGY

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/ Symbolic Reasoning Skills: 5 credits - MATH& 107 or higher with the exception of MATH& 131.

Humanities: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed. HIST& 126 and PHIL& 101, and 5 additional credits from another Humanities discipline are recommended.

Social Sciences: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. ANTH& 206, HIST& 127, and SOC& 101 are recommended.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Natural Sciences: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

Diversity: 5 credits - from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: ANTH 109 American Cultural Diversity:DIV.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List on the distribution list for transfer degrees.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Notes</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 109</td>
<td>American Cultural Diversity:DIV</td>
<td>5</td>
</tr>
<tr>
<td>ART 207</td>
<td>Arts of the World:DIV</td>
<td>5</td>
</tr>
<tr>
<td>ART 227</td>
<td>History of Western Art</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 150</td>
<td>Human Genetics &amp; Society:DIV</td>
<td>5</td>
</tr>
<tr>
<td>ENVS 150</td>
<td>Environment and Society:DIV</td>
<td>5</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Race and Ethnicity:DIV</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Gain a basic introduction to scientific reasoning as it applies to study of human evolution.
- Gain a basic understanding of human beings as an aspect of the natural world and their interaction with the physical environment.
- Gain a basic understanding of humans as a product of the contingencies of natural history with no more significance than any other species.
- Gain a basic understanding of the history of scholarship which serves as foundation of modern cosmology and anthropological thought.
- Achieve an appreciation of the diversity of cultures and the role it plays in determining human behavior.
- Gain a comprehension of the nature of human language
- Gain a comprehension of the nature of human societies
- Develop the ability to apply the notion of relativism to the understanding of religion, values, world views, ideology and the concept of human nature
- Develop a conceptual understanding of the basic issues of multiculturalism.
- Develop an informed understanding of the basic issues of class, ethnicity, race, gender, and religion as cultural constructs.
At LCC, students may select beginning and advanced courses in a variety or artistic media, including drawing, painting, photography, ceramics and pottery. A solid base in studio art combined with art history provides the basic liberal arts foundation essential for those interested in entering an art profession or transferring to complete a bachelor’s degree in art.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

**Quantitative/Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher with the exception of MATH& 131.

**Humanities:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

**Students completing this program should acquire the following skills and abilities:**

- Students in studio art courses will demonstrate the ability to apply artistic skills and knowledge in the communication of visual ideas.
- Students in history of art courses will demonstrate an understanding of the role of the visual arts in culture and world civilizations.
Modern automobiles are complex machines requiring service technicians who are highly skilled and knowledgeable about mechanical, electrical, and electronic systems. The Automotive Technology program provides a strong combination of classroom theory and hands-on practice, with courses based on competencies established by the National Automotive Technician Education Foundation (NATEF). The LCC Automotive Technology program is certified by NATEF, a branch of the National Institute for Automotive Service Excellence (ASE).

**Degree Requirements**

To earn an Associate in Applied Science – Automotive Technology degree, you must complete a minimum of **115-129 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 5 credits – ENGL 110 Industrial Communications recommended.

**Health:** 3 credits – HLTH 100 Occupational Safety and Health.

**Quantitative Skills:** 5 credits – MATH 088/089 Pre-College Math II or higher. (MATH 106 recommended).

**Human Relations/Social Science/Diversity:** 5 credits – BUS 144 Management of Human Relations: DIV meets all three of these requirements and is recommended.

**Natural Sciences:** 5 credits – TECH 100 Advanced Principles of Technology recommended.

**Electives:** 1 – 15 credits. The following is a list of suggested courses: ACCT 101 (5 cr.), BUS& 101 (5 cr.), CS 110 (3 cr.), DHET 216 (5 cr.), WELD 151 (1 – 6 cr.), WELD152 (1 – 10 cr.), WELD 221 (10 cr.)

**Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.**

**Total credits required to earn this degree:** 115-129

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMTC 100</td>
<td>Essentials of Mechanics 5</td>
</tr>
<tr>
<td>AMTC 101</td>
<td>Electrical Systems 5</td>
</tr>
<tr>
<td>AMTC 102</td>
<td>Electrical Systems II 10</td>
</tr>
<tr>
<td>AMTC 104</td>
<td>Vehicle Climate Control 6</td>
</tr>
<tr>
<td>AMTC 111</td>
<td>Hydraulic Brakes 5</td>
</tr>
<tr>
<td>AMTC 112</td>
<td>Antilock Brakes/Traction Control 3</td>
</tr>
<tr>
<td>AMTC 121</td>
<td>Gas Engines I 5</td>
</tr>
<tr>
<td>AMTC 122</td>
<td>Gas Engines II 10</td>
</tr>
<tr>
<td>AMTC 201</td>
<td>Fuels and Emissions 10</td>
</tr>
<tr>
<td>AMTC 202</td>
<td>Automotive Computer Systems 10</td>
</tr>
<tr>
<td>AMTC 215</td>
<td>Suspension and Alignment 8</td>
</tr>
<tr>
<td>AMTC 216</td>
<td>Automatic Transmission 8</td>
</tr>
<tr>
<td>AMTC 217</td>
<td>Powertrains 6</td>
</tr>
</tbody>
</table>

**Students completing this program should acquire the following skills and abilities:**

- Demonstrate competency in diagnosing electronic and drivability problems.
- Demonstrate competency in diagnosing brake and antilock brake problems.
- Demonstrate competency in diagnosing fuel delivery and fuel injection problems.
- Demonstrate competency in using Mitchell on Demand and Motor All Data computer information systems.
The biological sciences study living organisms and fundamental life processes that form the basis for careers in healthcare, research, teaching and related fields. Begin studies toward a bachelor’s degree in general or molecular biology, botany, ecology, fisheries, genetics, marine science, soil science, wildlife management or zoology.

**Degree Requirements**

To earn an Associate in Sciences - Transfer degree, you must complete a **minimum of 90 transferable credits** with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I.

**Quantitative/Symbolic Reasoning Skills:** 10 credits - MATH& 151* Calculus I **AND** MATH& 152* Calculus II.

**Humanities and Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: ENVS 150 Environment and Society:DIV.

**Pre-Major Requirements:**

* It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 211*</td>
<td>Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 212*</td>
<td>Majors Biology Animal</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 213*</td>
<td>Majors Biology Plant</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 161*</td>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td>General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 261*</td>
<td>Organic Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 262*</td>
<td>Organic Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Elements of Statistics</td>
<td>OR</td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td>Calculus III</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:** Sufficient additional college-level credits to meet the 90 credit minimum. These remaining credits must include program advisor approved credits. MATH 113 and MATH 150 are recommended for students needing the courses prior to MATH& 151. Other recommended electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 130</td>
<td>Biodiversity and the Pacific NW</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 260</td>
<td>Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 263*</td>
<td>Organic Chemistry w/Lab III</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

**Students completing this program should acquire the following skills and abilities:**

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of organisms; evolution; and ecology.
- Biology students will express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Biology students will apply various techniques and processes using information, data, and situations, to draw logical, rational and ethical and coherent conclusions.
- Major-level Biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills in practical and abstract contexts.
Certificate of Proficiency

ADMINISTRATIVE SUPPORT

Administrative support professionals are responsible for performing and coordinating a wide range of activities, managing information flow, providing excellent customer service, and operating and maintaining a wide variety of office equipment. Organizations in a wide variety of industries—including the health care field and medical offices—rely on skilled administrative support staff to keep operations running efficiently and effective.

Gainful Employment Program Disclosure Data
[http://www.lowercolumbia.edu/programs/gainful-employment.aspx](http://www.lowercolumbia.edu/programs/gainful-employment.aspx)

Certificate Requirements

To earn an Administrative Support Certificate of Proficiency, you must complete a **minimum of 51 credits** and pass each course listed in the program requirements with a C or above. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I OR BUS 119 Business Communications.

**Quantitative Skills:** 5 credits – BUS 104 Business Math Applications OR MATH 088/089 Pre-College Math II OR 5 credits of a higher level math course.

**Human Relations/Social Science:** 5 credits – BUS 144 Management of Human Relations: DIV recommended

### Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEC 104</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 111</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 112</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 130</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 144</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 148</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 260</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 294</td>
<td>2</td>
</tr>
<tr>
<td>CS 111</td>
<td>4</td>
</tr>
<tr>
<td>CS 121</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 51**

**Students completing this program should acquire the following skills and abilities:**

- Demonstrate proficiency in the use of business equipment, computer software, and technology
- Create and manage business documents, spreadsheets, and databases
- Apply excellent customer service skills
- Demonstrate competency in basic math
- Demonstrate effective problem-solving skills
- Demonstrate competency in records management
- Demonstrate proficiency in organizational skills and assigning priority
- Demonstrate ethical decision-making
Associate in Applied Science

ADMINISTRATIVE SERVICES MANAGER

Administrative professionals must possess knowledge of business principles, day-to-day operations, leadership, and interpersonal skills. Administrative professionals are responsible for managing communication and information using appropriate business technology tools. They are often tasked with customer service, project management, analysis and reporting of business data, budgeting, and technical expertise with Internet commerce and social media tools as a means for marketing. Administrative professionals must also be able to collaborate and effectively work in a team environment.

Degree Requirements

To earn an Associate in Applied Science – Administrative Services Manager degree, you must complete a minimum of 93 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I.

**Quantitative Skills:** 5 credits – BUS 104 Business Math Applications.

**Human Relations/Social Science/Diversity:** 5 credits – BUS 144 Management of Human Relations:DIV recommended.

**Natural Sciences/Humanities:** 5 credits – choose from the distribution list for Professional/Technical degrees.

SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication recommended.

Notes:

BUS 101 Intro to Business should be taken sometime in first year as it is the prerequisite for BUS 264 that is taken in second year.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Total credits required to earn this degree:** 93

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>Intro to Accounting Concepts</td>
<td>5</td>
</tr>
<tr>
<td>BUS&amp; 150</td>
<td>Customer Service/Mgmnt</td>
<td>5</td>
</tr>
<tr>
<td>BUS 264</td>
<td>Principles of Marketing</td>
<td>5</td>
</tr>
<tr>
<td>BUS 270</td>
<td>Intro to Project Management</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 104</td>
<td>Intro to Business Technology</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 111</td>
<td>Word Processing I</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 112</td>
<td>Word Processing II</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 148</td>
<td>Intro to Outlook</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 148</td>
<td>Office Procedures</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 294</td>
<td>Career Success</td>
<td>2</td>
</tr>
<tr>
<td>CS 111</td>
<td>Intro to Windows</td>
<td>4</td>
</tr>
<tr>
<td>CS 121</td>
<td>Introduction to Spreadsheets</td>
<td>5</td>
</tr>
<tr>
<td>CS 122</td>
<td>Advanced Spreadsheet Apps</td>
<td>5</td>
</tr>
<tr>
<td>CS 130</td>
<td>Introductory Database Apps</td>
<td>5</td>
</tr>
<tr>
<td>CS 230</td>
<td>Database Development</td>
<td>5</td>
</tr>
<tr>
<td>ENGL&amp; 235</td>
<td>Technical Writing</td>
<td>5</td>
</tr>
</tbody>
</table>

**Students completing this program should acquire the following skills and abilities:**

- Demonstrate proficiency and effectiveness in the use of business technology tools
- Demonstrate proficiency in the use of social media for business purposes
- Demonstrate competency in analyzing and presenting data
- Demonstrate effective team building and communication skills
- Demonstrate effective problem-solving skills
- Demonstrate proficiency in project management
- Demonstrate ethical decision-making
- Demonstrate competency in business principles such as marketing, interpersonal skills, and presentation

Revised April 2014
Certificate of Completion

BASIC OFFICE SKILLS II

This shorter Certificate of Completion (COC) will encourage retention through completion, as well as give students a set of milestones to proceed through their education. Upon completion of the COC, students can choose to continue further and work towards completion of the Certificate of Proficiency (COP) and further onto an Associate's degree. Successfully achieving this shorter certificate will give students a few employable skills early on in their educational journey and increase their motivation to continue.

Certificate Requirements

To earn a Basic Office Skills II Certificate of Completion, you must complete a minimum of 19 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEC 105</td>
<td>Keyboarding Speed/Accuracy</td>
<td>1</td>
</tr>
<tr>
<td>BTEC 104</td>
<td>Intro to Business Technology</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 111</td>
<td>Word Processing I</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 130</td>
<td>Electronic Calculators</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 148</td>
<td>Intro to Outlook</td>
<td>2</td>
</tr>
<tr>
<td>CS 111</td>
<td>Intro to Windows</td>
<td>4</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 19**

NOTE: BTEC 100 Computer Keyboarding may be necessary before being accepted into the program depending on level of competency in word processing and other computer skills.

Students completing this program should acquire the following skills and abilities:

- Demonstrate proficiency in document formatting
- Develop a proficiency in keyboarding of 35 words per minute
- Identify how business technology influences people and procedures in today's business office
- Demonstrate an understanding of electronic communication
ASSOCIATE IN BUSINESS

The Associate in Business degree program is designed for students planning to transfer to a university program in Washington. Management, accounting, marketing, finance, operations management, and human resources are some of the specializations available for those pursuing advanced studies.

Notes to students:
- You will need to have early contact with an advisor at the potential transfer institution regarding specific course choices in each area (Humanities, Social Science and Business Law or Introduction to Law) and for the electives.
- It is up to you to check with the transfer institution regarding requirements for overall minimum GPA, a higher GPA in a selected subset of courses, or a specific minimum grade in one or more courses such as math or English.

Degree Requirements

To earn an Associate in Business-DTA/MRP degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area. The credits must include the following:

Communications: 10 credits - ENGL 101 English Composition I AND ENGL 102 Composition II. Note 1: To meet the current EWU requirements, the second English Composition course must be equivalent to EWU's English 201 College Composition: Analysis, Research, and Documentation.

Quantitative/Symbolic Reasoning Skills: 10 credits - MATH& 148 Business Calculus AND one of the following 5 credit courses:
MATH 125 Applied College Algebra
MATH& 142 Precalculus II or a higher level math that includes calculus as a prerequisite. Intermediate Algebra proficiency required.

Humanities: 15 credits – From the distribution list for transfer degrees. Selected from at least two disciplines. No more than 10 credits per discipline area. No more than 5 credits in world languages. No more than 5 credits in foreign language at the 100 level. No more than 5 credits of performance/skills classes are allowed. Note 2: Students intending the international business major should consult their potential transfer institutions regarding the level of world language required for admission to the major. Five credits in world languages may apply to the Humanities requirement. Note 3: Students are encouraged to include a speech or oral communication course (not small group communication).

Social Science: 15 credits – ECON & 201 Micro Economics AND ECON & 202 Macro Economics AND an additional 5 credits of Social Science from the distribution list for transfer degrees.

Natural Sciences: 15 credits – BUS 206 Statistical Methods AND 10 additional credits in physical, biological and/or earth science, including at least one lab course, from the distribution list for transfer degrees. No more than 10 credits allowed in any one discipline. Note 4: Students intending the manufacturing management major at WWU should consult WWU regarding the selection of natural science courses required for admission to the major.

*It is recommended that sequence courses be completed at one institution.

Business Courses: 20 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT&amp; 201* Principles of Accounting I</td>
<td>5</td>
</tr>
<tr>
<td>ACCT&amp; 202* Principles of Accounting II</td>
<td>5</td>
</tr>
<tr>
<td>ACCT&amp; 203* Principles of Accounting III</td>
<td>5</td>
</tr>
<tr>
<td>BUS&amp; 201 Business Law</td>
<td>5</td>
</tr>
</tbody>
</table>

Universities with a lower division Business Law requirement: UNV (all campuses), WSU (all campuses), EWU, CWU, WWU, Gonzaga, SMU, SPU, Whitworth.

The following institutions do not require a lower division Business Law course and agree to accept the course taken as part of this degree as a lower division elective, but generally not as an equivalent to the course required at the upper division: Heritage, PLU, SU, and Walla Walla University.

Note 5: International students who completed a business law course specific to their home country must take a business law course at a U.S. institution in order to demonstrate proficiency in U.S. business law.

Electives: 5 credits of non-business electives except as noted below:

Note 6: Five institutions have requirements for admission to the major that go beyond those specified above. Students can meet these requirements by careful selection of the elective University Course Equivalent to:

- WSU (all campuses): Management Information Systems MIS 250
- Gonzaga: Management Information Systems BMIS 235
- PLU: Computer Applications CSCE 120, either an equivalent course or skills test
- SPU: Spreadsheets (BUS 1700), either an equivalent course or skills test
- WWU: Introduction to Business Computer Systems MIS 220 (for transfer students entering fall 2014)

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.
Entry-level supervisory and management positions require people with a strong foundation in general business, accounting, economics, and computers. The Business Management AAS degree is also designed for people interested in starting a business or preparing for advancement opportunities.

**Degree Requirements**

To earn an Associate in Applied Science – Business Management degree, you must complete a minimum of 90 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

- **Communications:** 5 credits - BUS 119 Business Communications OR ENGL& 101 English Composition I.
- **Quantitative Skills:** 5 credits – BUS 104 Business Math Applications OR MATH 088/089 Pre-College Math II.
- **Human Relations/Social Science/Diversity:** 5 credits – BUS 144 Management of Human Relations: DIV.
- **Humanities /Natural Sciences:** 5 credits – Choose 5 credits from the [distribution list for Professional/Technical degrees](lowercolumbia.edu/catalog). SPCH 110 Intro to Public Speaking is recommended.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>Intro to Accounting Concepts</td>
<td></td>
</tr>
<tr>
<td>ACCT&amp; 201</td>
<td>Principles of Accounting I</td>
<td>5</td>
</tr>
<tr>
<td>BUS 101</td>
<td>Introduction to Business</td>
<td>5</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Customer Service/Mgmt: DIV</td>
<td>5</td>
</tr>
<tr>
<td>BUS 165</td>
<td>Salesmanship</td>
<td>5</td>
</tr>
<tr>
<td>BUS&amp; 201</td>
<td>Business Law</td>
<td>5</td>
</tr>
<tr>
<td>BUS 240</td>
<td>Principles of Supervision</td>
<td>5</td>
</tr>
<tr>
<td>BUS 244</td>
<td>Human Resource Management</td>
<td>5</td>
</tr>
<tr>
<td>BUS 245</td>
<td>Principles of Management</td>
<td>5</td>
</tr>
<tr>
<td>BUS 259</td>
<td>Start/Managing a Small Business</td>
<td>5</td>
</tr>
<tr>
<td>BUS 264</td>
<td>Principles of Marketing</td>
<td>5</td>
</tr>
<tr>
<td>BUS 294</td>
<td>Career Success</td>
<td>2</td>
</tr>
<tr>
<td>CS 121</td>
<td>Introduction to Spreadsheets</td>
<td></td>
</tr>
<tr>
<td>ECON 105</td>
<td>Introduction to Economics OR</td>
<td></td>
</tr>
<tr>
<td>ECON&amp; 201</td>
<td>Micro Economics</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:** 8 credits – See advisor for approved elective list. Courses in ACCT, BUS, BTEC, CS, and/or SPCH 110 are recommended. If SPCH 110 is used to meet the Humanities requirement, it may not be counted as an elective.

**Total credits required to earn this degree:** 90

**Students completing this program should acquire the following skills and abilities:**

- Perform basic bookkeeping and accounting tasks manually and using Microsoft Excel and Quickbooks Pro accounting software.
- Demonstrate familiarity with economic concepts.
- Identify the relationships among various business functions such as accounting, marketing, purchasing, human resources, and operations management.
- Demonstrate familiarity with Contract Law and the Uniform Commercial Code.
- Perform basic mathematical calculations related to business such as gross payroll, payroll deductions, interest earned, and property taxes.
- Demonstrate computer proficiency using Windows Workstation and Microsoft Office software.
- Prepare written business communications and demonstrate proficiency in public speaking.
- Demonstrate proficiency in developing a feasibility plan and business plan for a small business.
Associate in Applied Science – Transfer

BUSINESS MANAGEMENT to The Evergreen State College

The Associate in Applied Science-Transfer degree in Business Management is designed to prepare students for entry-level management positions, as well as meet the requirements for transfer to The Evergreen State College.

Degree Requirements

To earn an Associate in Applied Science – Business Management - Transfer degree, you must complete a minimum of **90 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 10 credits - ENGL& 101 English Composition I and ENGL& 102 Composition II.

**Health:** 3 credits – HLTH 100 Occupational Safety and Health.

**Quantitative Skills:** 5 credits – MATH 125 – Applied College Algebra.

**Human Relations/Diversity:** 5 credits – BUS 144 Management of Human Relations: DIV.

**Humanities:** 5 credits – from the distribution list for Professional/Technical degrees.

**Natural Sciences:** 5 credits – from the distribution list for Professional/Technical degrees.

**Social Science:** 10 credits – BUS& 201 Business Law AND ECON 105 Intro to Economics OR ECON& 201 Micro Economics.

**Technical Electives:** 2 credits – See advisor for approved courses.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT&amp; 201</td>
<td>Principles of Accounting I</td>
<td>5</td>
</tr>
<tr>
<td>BUS&amp; 101</td>
<td>Introduction to Business</td>
<td>5</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Customer Service/Mgmt</td>
<td>5</td>
</tr>
<tr>
<td>BUS 165</td>
<td>Salesmanship</td>
<td>5</td>
</tr>
<tr>
<td>BUS 240</td>
<td>Principles of Supervision</td>
<td>5</td>
</tr>
<tr>
<td>BUS 245</td>
<td>Principles of Management</td>
<td>5</td>
</tr>
<tr>
<td>BUS 259</td>
<td>Start/Managing a Small Business</td>
<td>5</td>
</tr>
<tr>
<td>BUS 264</td>
<td>Principles of Marketing</td>
<td>5</td>
</tr>
<tr>
<td>CS 121</td>
<td>Introduction to Spreadsheets</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total credits required to earn this degree:** **90**

**Students completing this program should acquire the following skills and abilities:**

- Perform basic bookkeeping and accounting tasks manually and using Microsoft Excel and Quickbooks Pro accounting software.
- Demonstrate familiarity with economic concepts.
- Identify the relationships among various business functions such as accounting, marketing, purchasing, human resources, and operations management.
- Demonstrate familiarity with Contract Law and the Uniform Commercial Code.
- Prepare written business communications and demonstrate proficiency in public speaking.

- Perform basic mathematical calculations related to business such as gross payroll, payroll deductions, interest earned, and property taxes.
- Demonstrate computer proficiency using Windows Workstation and Microsoft Office software.
- Demonstrate proficiency in developing a feasibility plan and business plan for a small business.
Certificate of Proficiency

GENERAL BUSINESS

The General Business Certificate Program prepares students for entry-level employment in a variety of business support positions. The program generally can be completed within one academic year. Students may enter the program in the fall, winter or spring quarter.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a General Business Certificate of Proficiency, you must complete a minimum of 45 credits. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I OR BUS 119 Business Communications.

**Quantitative Skills:** 5 credits - BUS 104 Business Math Applications OR MATH 088/089 Pre-College Math II OR 5 credits of a higher level math course.

**Human Relations/Social Science:** 5 credits - BUS 144 Management of Human Relations.

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 146</td>
<td>1</td>
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<tr>
<td>BTEC 149</td>
<td>1</td>
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<tr>
<td>BUS&amp; 101</td>
<td>5</td>
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<tr>
<td>BUS 150</td>
<td>5</td>
</tr>
<tr>
<td>BUS 165</td>
<td>5</td>
</tr>
<tr>
<td>CS 110</td>
<td>3</td>
</tr>
<tr>
<td>CS 121</td>
<td>5</td>
</tr>
<tr>
<td>Intro to Accounting Concepts</td>
<td>5</td>
</tr>
<tr>
<td>PowerPoint Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>Internet Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Business</td>
<td>5</td>
</tr>
<tr>
<td>Customer Service/Management</td>
<td>5</td>
</tr>
<tr>
<td>Salesmanship</td>
<td>5</td>
</tr>
<tr>
<td>Intro to Microcomputer Apps</td>
<td>3</td>
</tr>
<tr>
<td>Intro to Spreadsheets</td>
<td>5</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 45

Students completing this program should acquire the following skills and abilities:

- Entry-level supervisory and customer service skills required in business.
- Proficiency in using basic workplace computer applications.
- Proficiency in office administration procedures and techniques.
Associate in Applied Science

MEDICAL ADMINISTRATIVE SUPPORT

Administrative support professionals are responsible for performing and coordinating a wide range of activities, managing information flow, providing excellent customer service, and operating and maintaining a wide variety of office equipment. Organizations in a wide variety of industries, including the health care field and medical offices rely on skilled administrative support staff to keep operations running efficiently and effectively.

Degree Requirements

To qualify for an Associate in Applied Science – Medical Administrative Support degree, you must complete a minimum of 90 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I.

**Quantitative Skills:** 5 credits – BUS 104 Business Math Applications.

**Human Relations/ Social Science/ Diversity:** 5 credits – BUS 144 Management of Human Relations:DIV

**Natural Sciences/ Humanities:** 5 credits – choose from the distribution list for Prof/ Tech Degrees.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>Intro to Accounting Concepts</td>
<td>5</td>
</tr>
<tr>
<td>BUS 119</td>
<td>Business Communications</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 104</td>
<td>Intro to Business Technology</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 111</td>
<td>Word Processing I</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 112</td>
<td>Word Processing II</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 130</td>
<td>Electronic Calculators</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 144</td>
<td>OneNote Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>BTEC 148</td>
<td>Intro to Outlook</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 164</td>
<td>Legal Aspects of the Medical Office</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 165</td>
<td>Cultural Awareness f/Healthcare</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 171</td>
<td>Medical Reception Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 172</td>
<td>Medical Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 173</td>
<td>Computers in the Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 181</td>
<td>Medical Terminology I OR</td>
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<tr>
<td>MEDA 101</td>
<td>Medical Vocabulary I</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 182</td>
<td>Medical Terminology II OR</td>
<td></td>
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<tr>
<td>MEDA 102</td>
<td>Medical Vocabulary II</td>
<td>3</td>
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<tr>
<td>BTEC 294</td>
<td>Career Success</td>
<td>2</td>
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<tr>
<td>CS 111</td>
<td>Intro to Windows</td>
<td>4</td>
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<tr>
<td>CS 121</td>
<td>Introduction to Spreadsheets</td>
<td>5</td>
</tr>
<tr>
<td>CS 130</td>
<td>Introductory Database Applications</td>
<td>5</td>
</tr>
<tr>
<td>HLTH 105</td>
<td>First Aid/CPR/BB Pathogens</td>
<td>1</td>
</tr>
</tbody>
</table>

**Electives:** 4 credits – ACCT, BUS, BTEC, or CS

**Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.**

**Total credits required to earn this degree:** 90

Students completing this program should acquire the following skills and abilities:

- Demonstrate proficiency in the use of business equipment, computer software, and technology for medical offices
- Create and manage business documents, spreadsheets, and databases
- Apply excellent customer service skills
- Demonstrate competency in basic math and accounting
- Demonstrate effective problem-solving skills
- Demonstrate competency in records management
- Demonstrate proficiency in organizing skills and assigning priority
- Demonstrate ethical decision-making
Certificate of Proficiency

MEDICAL BILLING & CODING SPECIALIST

Administrative support professionals are responsible for performing and coordinating a wide range of activities, managing information flow, providing excellent customer service, and operating and maintaining a wide variety of office equipment. Organizations in a wide variety of industries, including the health care field and medical offices rely on skilled administrative support staff to keep operations running efficiently and effectively.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Medical Billing & Coding Specialist Certificate of Proficiency, you must complete a **minimum of 58-60 credits** and pass each course listed in program requirements with a C or above. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I OR BUS 119 Business Communications.

**Quantitative Skills:** 5 credits - BUS 104 Business Math Applications

**Human Relations/ Social Science:** 5 credits - BUS 144 Management of Human Relations:DIV (recommended)

<table>
<thead>
<tr>
<th>Program Requirements:</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 170</td>
<td>Human Biology OR</td>
</tr>
<tr>
<td>MEDA 120</td>
<td>Survey of Human A &amp; P</td>
</tr>
<tr>
<td>5</td>
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</tr>
<tr>
<td>BTEC 104</td>
<td>Intro to Business Technology OR</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Apps</td>
</tr>
<tr>
<td>CS 121</td>
<td>Intro to Spreadsheets/Excel</td>
</tr>
<tr>
<td>CS 130</td>
<td>Intro to Database/Access</td>
</tr>
<tr>
<td>BTEC 161</td>
<td>Intro to ICD-10 Coding, Part I</td>
</tr>
<tr>
<td>BTEC 162</td>
<td>Intro to ICD-10 Coding, Part II</td>
</tr>
<tr>
<td>BTEC 163</td>
<td>Intro to Basic CPT Coding</td>
</tr>
<tr>
<td>BTEC 164</td>
<td>Legal Aspects of Medical Office</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>BTEC 181</td>
<td>Medical Terminology I OR</td>
</tr>
<tr>
<td>MEDA 101</td>
<td>Medical Vocabulary</td>
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<td>3</td>
<td></td>
</tr>
<tr>
<td>BTEC 182</td>
<td>Medical Terminology II OR</td>
</tr>
<tr>
<td>MEDA 102</td>
<td>Medical Vocabulary</td>
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<td>3</td>
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<tr>
<td>BTEC 294</td>
<td>Career Success</td>
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<td>2</td>
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</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 58-60**

**Students completing this program should acquire the following skills and abilities:**

- Demonstrate proficiency in the use of business equipment, computer software, and technology for medical offices
- Assign ICD codes to diagnoses and procedures
- Assign CPT codes for medical services and procedures
- Create and manage business documents, spreadsheets, and databases
- Apply excellent customer service skills
- Demonstrate competency in basic math
- Demonstrate effective problem-solving skills
- Demonstrate competency in records management
- Demonstrate proficiency in organizational skills and assigning priority
- Demonstrate ethical decision making

Revised February 2014
Certificate of Proficiency

MEDICAL RECEPTION

Administrative support professionals are responsible for performing and coordinating a wide range of activities, managing information flow, providing excellent customer service, and operating and maintaining a wide variety of office equipment. Organizations in a wide variety of industries, including the health care field and medical offices—rely on skilled administrative support staff to keep operations running efficiently and effectively.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Medical Reception Certificate of Proficiency, you must complete a **minimum of 46 credits** and pass each course listed in program requirements with a C or better. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I **OR** BUS 119 Business Communications.

**Quantitative Skills:** 5 credits – BUS 104 Business Math Applications **OR** MATH 088/089 Pre-College Math II

**Human Relations/Social Science:** 5 credits – BUS 144 Management of Human Relations: DIV recommended.

<table>
<thead>
<tr>
<th>Program Requirements:</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEC 104</td>
<td>Intro to Business Technology</td>
</tr>
<tr>
<td>BTEC 111</td>
<td>Word Processing I</td>
</tr>
<tr>
<td>BTEC 130</td>
<td>Electronic Calculators</td>
</tr>
<tr>
<td>BTEC 144</td>
<td>OneNote Fundamentals</td>
</tr>
<tr>
<td>BTEC 165</td>
<td>Culture Awareness I/Healthcare</td>
</tr>
<tr>
<td>BTEC 171</td>
<td>Medical Reception Procedures</td>
</tr>
<tr>
<td>BTEC 181</td>
<td>Medical Terminology I <strong>OR</strong></td>
</tr>
<tr>
<td>MEDA 101</td>
<td>Medical Vocabulary I</td>
</tr>
<tr>
<td>BTEC 182</td>
<td>Medical Terminology II <strong>OR</strong></td>
</tr>
<tr>
<td>MEDA 102</td>
<td>Medical Vocabulary II</td>
</tr>
<tr>
<td>BTEC 294</td>
<td>Career Success</td>
</tr>
<tr>
<td>CS 111</td>
<td>Intro to Windows</td>
</tr>
<tr>
<td>HLTH 105</td>
<td>First Aid/CPR/BB Pathogens</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate:** 46

Students completing this program should acquire the following skills and abilities:

- Demonstrate proficiency in the use of business equipment, computer software, and technology for medical offices
- Create and manage business documents, spreadsheets, and databases
- Apply excellent customer service skills
- Demonstrate competency in basic math
- Demonstrate effective problem-solving skills
- Demonstrate competency in records management
- Demonstrate proficiency in organizational skills and assigning priority
- Demonstrate ethical decision-making
Certificate of Completion

RETAIL MANAGEMENT

Some colleges offering WAFC-endorsed Retail Management Certificates utilize courses with fewer credits than the comparable LCC course. If you have started a Retail Management Certificate with these colleges, you may obtain a Certificate of Completion from LCC by transferring in courses in the content areas listed below, with the following provisions:

- A maximum of six of the ten content areas may be satisfied with transfer courses (i.e., four of the content areas must be completed at LCC, 18 credits minimum);
- Courses transferred in must equate to at least 3 quarter credits per content area;
- After transfer evaluation, students completing all requirements but having fewer than 45 quarter credits will receive a Certificate of Completion.

Program advisors can explain options to students wishing to transfer in credits.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Retail Management Certificate of Completion, you must complete a minimum of 36 credits.

Content Areas
Business Communication
Business Mathematics
Leadership and Human Relations
Microcomputer Applications
Oral Communications (Business or Speech)
Bookkeeping or General Accounting
Introduction to Management
Marketing Management
Human Resources Management
Retail Management & Merchandising

Total credits required to earn this certificate: 36

Students completing this program should acquire the following skills and abilities:

- Entry-level supervisory, customer service and marketing skills required in the retail management field.
- Knowledge of employment expectations in the workplace, including application of operations management techniques specific to the retail trade; e.g. inventory management.
- Proficiency in using basic workplace computer applications.
Certificate of Proficiency

RETAIL MANAGEMENT

The Retail Management Certificate of Proficiency prepares current and future retail employees for success in the fast-paced retail industry. Students develop an understanding of the scope and requirements of a management position in a retail business. To stay competitive, grocery stores, department stores, specialty retailers, and “eTailers” need skilled people. LCC’s Retail Management certificate program was developed with, and is endorsed by, the Western Association of Food Chains (WAFC). Certificate graduates may continue their studies by applying certificate course work towards the AAS degree in Business Management.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Retail Management Certificate of Proficiency, you must complete a minimum of 48 credits. The credits must include the following:

**Communications:** 5 credits - BUS 119 Business Communications OR ENGL& 101 English Composition I.

**Quantitative Skills:** 5 credits – BUS 104 Business Math Applications OR MATH 088/089 Pre-College Math II.

**Human Relations/Social Science:** 5 credits – BUS 144 Management of Human Relations.

<table>
<thead>
<tr>
<th>Program Requirements:</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>Intro to Accounting Concepts 5</td>
</tr>
<tr>
<td>BUS 159</td>
<td>Principles of Retailing 5</td>
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<tr>
<td>BUS 244</td>
<td>Human Resource Management 5</td>
</tr>
<tr>
<td>BUS 245</td>
<td>Principles of Management 5</td>
</tr>
<tr>
<td>BUS 264</td>
<td>Principles of Marketing 5</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Apps 3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Intro to Public Speaking 5</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 48

Students completing this program should acquire the following skills and abilities:

- Entry-level supervisory, customer service and marketing skills required in the retail management field.
- Knowledge of employment expectations in the workplace, including application of operations management techniques specific to the retail trade; e.g. inventory management.
- Proficiency in using basic workplace computer applications.

Revised January 2014
Associate in Arts – Direct Transfer Agreement

CHEMICAL DEPENDENCY STUDIES ACADEMIC PLAN

Prepare for baccalaureate coursework in psychology, human development, or other related discipline. This option is designed for students who intend to complete the Associate in Applied Science degree in Chemical Dependency Studies at LCC and plan to continue their education for a baccalaureate degree in a related field.

Degree Requirements

To earn an Associate in Arts-DTA, Focus of Study: CDS – you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area. The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 English Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative Skills: 5 credits - MATH& 107 or higher with the exception of MATH& 131.

Humanities: 15 credits – selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

Social Sciences/Diversity: 15 credits – SOC& 101:DIV, PSYC& 100, CDS 101

Natural Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. Recommended from the following: BIOL& 100, BIOL& 160, BIOL& 241, BIOL& 242, CHEM& 110, CHEM& 121, NUTR& 101

Electives: 25 credits – PSYC& 200, 15 credits of CDS courses (not including CDS 101), and 5 credits from the non-restricted course list.

Total credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Solve problems using quantitative/symbolic reasoning skills.
- Communicate effectively in written and spoken English.
- Develop a basic understanding of the many influences on human behavior and expression of the human experience.
- Demonstrate foundational skills required for entry-level counseling experience in chemical dependency.
- Develop a basic understanding of scientific reasoning as it applies to the study of human behavior.
- Articulate the major concepts involved in chemical dependency and its treatment.

Updated May 2014
Associate in Applied Science

CHEMICAL DEPENDENCY STUDIES

The Chemical Dependency Studies program provides courses to meet the educational requirements of the State WAC 246-811-030 for licensure of Chemical Dependency Professional (CDP). The curriculum includes the understanding of the following topics specific to alcohol and drug addiction treatment of individuals: Pharmacological actions of alcohol and other drugs; treatment methods; record keeping and case management; cultural diversity; health issues; community resources; individual and group counseling; relapse prevention; working with specific groups, such as youth and families; and professional and ethical responsibilities.

Degree Requirements

To earn an Associate in Applied Science – Chemical Dependency Studies degree, you must complete a minimum of 90 - 92 credits with a grade of “C” or higher in the program requirements. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I.

**Quantitative Skills:** 5 credits – MATH 098/099 Pre-College Math III OR higher.

**Human Relations/ Social Science:** 5 credits - PSYC& 100 General Psychology.

**Natural Sciences:** 5 or 6 credits – Choose from the following: BIOL& 100 Survey of Biology (5 cr.), OR BIOL& 170 Human Biology (5 cr.), OR BIOL& 241 Human A & P I (6 cr.), OR BIOL& 242 Human A & P II (6 cr.), OR CHEM& 100 Preparatory Chemistry (5 cr.), OR NUTR& 101 Nutrition (5 cr.)

**Diversity:** 5 credits – choose SOC& 101 Intro to Sociology:DIV OR SPCH 109 Intercultural Communications:DIV

*These CDS courses must be completed along with the Math, English, Psychology, Natural Science requirements to be eligible for your field work credits.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 101*</td>
<td>Intro to Addictions and Chem Depend</td>
<td>5</td>
</tr>
<tr>
<td>CDS 102*</td>
<td>Intro to Theories/Counsel CDC</td>
<td>3</td>
</tr>
<tr>
<td>CDS 107</td>
<td>Adolescent Dev Issues and Chem Depend</td>
<td>3</td>
</tr>
<tr>
<td>CDS 110*</td>
<td>Alcohol/Drug Pathophysiology and Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>CDS 111*</td>
<td>Record Keeping and Case Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>CDS 113</td>
<td>Treatment Principles of Chem Depend</td>
<td>3</td>
</tr>
<tr>
<td>CDS 121*</td>
<td>Legal &amp; Ethical Issues in Chem Dep Studies</td>
<td>3</td>
</tr>
<tr>
<td>CDS 201</td>
<td>Dynamics of the Family and Chem Depend</td>
<td>3</td>
</tr>
<tr>
<td>CDS 202</td>
<td>Chem Dep Counseling with Diverse Pop</td>
<td>3</td>
</tr>
<tr>
<td>CDS 203</td>
<td>Relapse Prevention and Intervention</td>
<td>3</td>
</tr>
<tr>
<td>CDS 215*</td>
<td>Group Counseling: Theories/Applic.</td>
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<tr>
<td>CDS 220</td>
<td>Co-Occurring Disorders</td>
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<tr>
<td>CDS 288</td>
<td>Cooperative Work Experience</td>
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<td>CDS 289*</td>
<td>Employment Portfolio Seminar</td>
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<td>HLTH 100</td>
<td>Occupational Safety and Health</td>
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<tr>
<td>PSYC&amp; 200</td>
<td>Lifespan Psychology</td>
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**Electives:**

Choose 2 or 3 of the following (for a minimum of 8 cr.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDS 105</td>
<td>Chemical Dependency/Domestic Violence</td>
<td>3</td>
</tr>
<tr>
<td>CDS 108</td>
<td>Running School-Based Support Groups</td>
<td>4</td>
</tr>
<tr>
<td>CDS 114</td>
<td>Suicide Assessment/Prevention</td>
<td>2</td>
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<tr>
<td>PSYC&amp; 220</td>
<td>Abnormal Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

(PSYC& 220 not offered every quarter. Check with advisor.)

**Total credits required to earn this degree:**

Students completing this program should acquire the following skills and abilities:

- Students will successfully complete course requirements that will prepare them for cooperative work experience in entry-level counseling as required by the State of Washington.
- As a result of internships, students will become gainfully employed as a Chemical Dependency Professional.
- Graduate skilled and caring professionals who have demonstrated not only the academics, but an excellent understanding of the skills needed in this field.
- Employers and students will be satisfied with the skills and training program received at Lower Columbia College articulated by the annual student survey and employer evaluations.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Revised May 2014
Associate in Sciences – Transfer
CHEMISTRY Academic Plan

Chemistry explores matter and the basic properties and processes that surround us. Prepare for advanced studies and to work in a laboratory, manufacturing, research, management, environmental services and related fields. Analysts and technicians assist scientists in general lab work or process control. Students can also specialize in chemistry education.

Degree Requirements
To earn an Associate in Sciences - Transfer degree, you must complete a **minimum of 90 transferable credits** with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 5 credits - ENGL 101 English Composition I.

**Quantitative/Symbolic Reasoning Skills:** 10 credits – MATH 151* Calculus I AND MATH 152* Calculus II.

**Humanities/Social Sciences:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.

**Diversity:** 5 credits – From the **Diversity course list**. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title.  
Example: SOC& 101 – Introduction to Sociology:DIV.

**Electives:** Sufficient additional college-level credits to meet the 90 credit minimum. These remaining credits must include program advisor approved credits.

**Recommended electives:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 231</td>
<td>Quantitative Analysis</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td>MATH 240</td>
<td>Differential Equations</td>
</tr>
</tbody>
</table>

**Pre-Major Requirements:**

* It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 161*</td>
<td>General Chemistry w/Lab I</td>
</tr>
<tr>
<td>CHEM 162*</td>
<td>General Chemistry w/Lab II</td>
</tr>
<tr>
<td>CHEM 163*</td>
<td>General Chemistry w/Lab III</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 210</td>
<td>Elements of Statistics OR Calculus III</td>
</tr>
<tr>
<td>MATH 153*</td>
<td>Engr Physics I w/Lab</td>
</tr>
<tr>
<td>PHYS 221*</td>
<td>Engr Physics II w/Lab</td>
</tr>
<tr>
<td>PHYS 222*</td>
<td>Engr Physics III w/Lab</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 261*</td>
<td>Organic Chemistry w/Lab I</td>
</tr>
<tr>
<td>CHEM 262*</td>
<td>Organic Chemistry w/Lab II</td>
</tr>
<tr>
<td>CHEM 263*</td>
<td>Organic Chemistry w/Lab III</td>
</tr>
</tbody>
</table>

**Minimum transferable credits required to earn this degree: 90**

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Students completing a Chemistry AS-T degree will be prepared for transfer to a chemistry program at baccalaureate-granting colleges and universities. Transfer readiness is evidenced by skills in applying scientific principles, using technology and mathematics to solve chemistry problems; understanding experimental processes; and understanding of chemical conceptual content.

- Will show evidence of ability in college-wide outcomes: numeracy, critical reasoning, communication, and interpersonal skills.
Skills developed in LCC’s Computer Aided Design (CAD) program can be applied in many fields including architectural, civil, mechanical, construction, and electrical/electronic design. Graduates may work as drafters or in support of engineers using CAD software to prepare technical drawings and plans. The Certificate of Proficiency program includes additional studies in other aspects of design and manufacturing.

Certificate of Completion

COMPUTER AIDED DESIGN

Certificate Requirements

To earn a Computer Aided Design Certificate of Completion, you must complete a **minimum of 17 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRFT 107</td>
<td>Technical Graphics</td>
<td>3</td>
</tr>
<tr>
<td>DRFT 210</td>
<td>Advanced Technical Graphics</td>
<td>3</td>
</tr>
<tr>
<td>DRFT 252</td>
<td>Advanced Computer Aided Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRFT 260</td>
<td>Survey of Civil and Architectural Graphics</td>
<td>3</td>
</tr>
<tr>
<td>MFG 115</td>
<td>Manufacturing Processes <strong>OR</strong></td>
<td></td>
</tr>
<tr>
<td>MFG 130</td>
<td>Materials Science</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 17**

Students completing this program should acquire the following skills and abilities:

- Use standard technical graphic practices to translate design ideas into appropriate print and electronic representations (sketches, diagrams, blueprints, digital drawings and data, etc.).
- Utilize Computer Aided Design software to create 3-D representations of parts and assemblies.
- Use mathematics to solve basic technical problems related to mechanical, electrical, and hydraulic systems, as well as to determine tolerances and dimensions.
- Describe various manufacturing processes used to translate technical drawings (digital and print) into actual products.
- Describe the nature and properties of a variety of common materials used in the design and production of various parts and assemblies.
- Work effectively and safely in a team environment.
- Communicate effectively in both written and verbal forms.
Certificate of Proficiency

COMPUTER AIDED DESIGN

Skills developed in LCC’s Computer Aided Design (CAD) program can be applied in many fields including architectural, civil, mechanical, construction, and electrical/electronic design. Graduates may work as drafters or in support of engineers using CAD software to prepare technical drawings and plans. The Certificate of Proficiency program includes additional studies in other aspects of design and manufacturing.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Computer Aided Design Certificate of Proficiency, you must complete a minimum of 45 credits. The credits must include the following:

Communications: 5 credits – ENGL 099 (was ENGL 100) College-Ready English II OR ENGL& 101 English Composition I OR ENGL 110 Industrial Communications.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II OR 5 credits of a higher level math course.

Human Relations/Social Science: 5 credits – BUS 144 Management of Human Relations recommended.

Health: 3 credits – HLTH 100 Occupational Safety and Health.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRFT 107</td>
<td>3</td>
<td>Technical Graphics</td>
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<tr>
<td>DRFT 210</td>
<td>3</td>
<td>Advanced Technical Graphics</td>
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<tr>
<td>DRFT 252</td>
<td>3</td>
<td>Advanced Computer Aided Drafting</td>
</tr>
<tr>
<td>DRFT 260</td>
<td>3</td>
<td>Survey of Civil &amp; Architectural Drafting</td>
</tr>
<tr>
<td>MFG 115</td>
<td>5</td>
<td>Manufacturing Processes</td>
</tr>
<tr>
<td>MFG 130</td>
<td>5</td>
<td>Materials Science</td>
</tr>
<tr>
<td>TECH 100</td>
<td>5</td>
<td>Principles of Technology</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 45

Students completing this program should acquire the following skills and abilities:

- Use standard technical graphic practices to translate design ideas into appropriate print and electronic representations (sketches, diagrams, blueprints, digital drawings and data, etc.).
- Utilize Computer Aided Design software to create 3-D representations of parts and assemblies.
- Use mathematics to solve basic technical problems related to mechanical, electrical, and hydraulic systems, as well as to determine tolerances and dimensions.
- Describe various manufacturing processes used to translate technical drawings (digital and print) into actual products.
- Describe the nature and properties of a variety of common materials used in the design and production of various parts and assemblies.
- Work effectively and safely in a team environment.
- Communicate effectively in both written and verbal forms.
Associate in Sciences – Transfer

COMPUTER SCIENCE Academic Plan

Begin studies toward a Bachelor of Science degree in Computer Science. For the AS-T degree in Computer Science, various courses are offered such as calculus, physics, and computer science. A student can also take individual course in areas of interest to deepen knowledge and understanding.

Degree Requirements

To earn an Associate in Sciences - Transfer degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. Universities may expect certain minimal grades in various courses in order to certify into their computer science programs. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I.

Quantitative/Symbolic Reasoning Skills: 10 credits – MATH& 151* Calculus I AND MATH& 152* Calculus II.

Humanities and Social Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science in a different discipline.

Lab Based Science Course: 5 credits – such as biology, chemistry, etc. Confer with advisor and the transfer university for acceptable courses.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology: DIV.

Pre-Major Requirements: 50 credits

*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 170</td>
<td>Computer Programming</td>
<td>5</td>
</tr>
<tr>
<td>CS 270</td>
<td>Data Structures I</td>
<td>5</td>
</tr>
<tr>
<td>CS 275</td>
<td>Object-Orientated Prg in Java</td>
<td>5</td>
</tr>
<tr>
<td>CS 280</td>
<td>Advanced Data Structures</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td>Calculus III</td>
<td>5</td>
</tr>
<tr>
<td>MATH 215</td>
<td>Discrete Structures</td>
<td>5</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Linear Algebra</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 221*</td>
<td>Engr Physics I w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td>Engr Physics II w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 223*</td>
<td>Engr Physics III w/Lab</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives: At least 5 additional college-level credits to meet the 90 credit minimum. These remaining credits must include program advisor approved credits.

Note: WSU requires additional course work. Please contact WSU advisor for details. See the back of this planner under NOTES for further details.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Apply mathematics to the solution of problems in computer science.
- Apply physics to the solution of problems in computer science.
- Discover, develop, and utilize algorithms suitable for the design of computer programs.
- Design and implement computer programs using various programming languages.
Modern law enforcement is a highly competitive career field. The more education you have, the better your chance of employment and advancement. Prepare for entry-level employment in law enforcement agencies and in some correctional facilities. People working within those areas can use the program to enhance their skills.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I **AND** ENGL& 102 Composition II **AND** SPCH 110 Intro to Public Speaking **OR** SPCH 114 Small Group Communication.

**Quantitative/Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher with the exception of MATH& 131.

**Humanities:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Natural Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Social Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Diversity:** 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

- **CJ 100** Basic Law Enforcement 5
- **CJ & 101** Intro to Criminal Justice 5
- **CJ & 110** Criminal Law 5
- **CJ 154** The American Legal System 5
- **CJ 181** Report Writing for Law Enforcement 3
- **CJ 183** Administration of Justice 5
- **CJ 185** Community Policing 5
- **CJ 260** Physical Evidence/Criminalistics 5
- **CJ 286** Criminal Law Administration 5

Minimum transferable credits required to earn this degree: 90

**Students completing this program should acquire the following skills and abilities:**

- Effectively communicate in writing.
- Prepare to take the Civil Service test.
- Understand the function of the legal system from the civil and criminal justice perspective.
- Apply basic investigative techniques in gathering and identifying crime scene evidence.
- Gain insight and awareness of the essential elements of community policing and problem solving.
- Understand how our criminal justice system evolved and how it functions.
- Identify and examine how the various agencies involved in the administration of justice interact.
- Demonstrate and explain the principles of criminal law including crimes against persons and property.
Modern law enforcement is a highly competitive career field. The more education you have, the better your chance of employment and advancement. Prepare for entry-level employment in law enforcement agencies and in some correctional facilities with an Associate in Applied Science degree in Criminal Justice. People working within those areas can use the program to enhance their skills.

**Degree Requirements**

To earn an Associate in Applied Science – Criminal Justice degree, you must complete a minimum of **94 - 96 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking.

**Health:** 2 credits – HLTH 106 Health Today.

**Quantitative Skills:** 5 credits – MATH 088/089 Pre-College Math II OR higher.

**Human Relations/ Social Sciences:** 5 credits – PSYC& 100 General Psychology.

**Humanities /Natural Sciences:** 5 credits – See the *distribution list for Professional/Technical degrees* for Humanities and Natural Science classes that meet this requirement.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 Intro to Sociology:DIV.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS&amp; 201</td>
<td>5</td>
<td>Business Law</td>
</tr>
<tr>
<td>CJ&amp; 101*</td>
<td>5</td>
<td>Introduction to Criminal Justice</td>
</tr>
<tr>
<td>CJ&amp; 110*</td>
<td>5</td>
<td>Criminal Law</td>
</tr>
<tr>
<td>CJ 154*</td>
<td>5</td>
<td>The American Legal System</td>
</tr>
<tr>
<td>CJ 181</td>
<td>3</td>
<td>Report Writing for Law Enforcement</td>
</tr>
<tr>
<td>CJ 183*</td>
<td>5</td>
<td>The Administration of Justice</td>
</tr>
<tr>
<td>CJ 260*</td>
<td>5</td>
<td>Physical Evidence &amp; Criminalistics</td>
</tr>
<tr>
<td>CS 110</td>
<td>3</td>
<td>Introduction to Microcomputer Apps</td>
</tr>
<tr>
<td>POLS&amp; 202</td>
<td>5</td>
<td>American Government</td>
</tr>
<tr>
<td>POLS 220</td>
<td>5</td>
<td>The Law and Social Issues</td>
</tr>
</tbody>
</table>

**Electives:** 11- 13 credits. See advisor.

Full-time law enforcement officers who have completed the training commission curriculum and are enrolled in the Criminal Justice program may waive three of the courses marked with asterisks (*) and substitute CJ 100 – Basic Law Enforcement for three courses. The training commission curriculum consists of 450 hours of classroom instruction.

**Total credits required to earn this degree: 94-96**

**Students completing this program should acquire the following skills and abilities:**

- Effectively communicate in writing.
- Prepare to take the Civil Service test.
- Understand the function of the legal system from the civil and criminal justice perspective.
- Apply basic investigative techniques in gathering and identifying crime scene evidence.
- Gain insight and awareness of the essential elements of community policing and problem solving.
- Understand how our criminal justice system evolved and how it functions.
- Identify and examine how the various agencies involved in the administration of justice interact.
- Demonstrate and explain the principles of criminal law including crimes against persons and property.
Associate in Arts - Direct Transfer Agreement

CRIMINAL JUSTICE Pathway
for City University of Seattle

Modern law enforcement is a highly competitive career field. The more education you have, the better your chance of employment and advancement. Prepare for entry-level employment in law enforcement agencies and in some correctional facilities. People working within those areas can use the program to enhance their skills.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/ Symbolic Reasoning Skills: 5 credits - MATH& 125 OR higher

Humanities: 15 credits – PHIL 210 OR HUM 104 AND additional courses selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

Natural Sciences: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Social Sciences: 15 credits - CJ & 101 AND additional courses selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

Diversity: 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title.

Example: SOC& 101 – Introduction to Sociology: DIV.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 183</td>
<td>Administration of Justice</td>
</tr>
<tr>
<td>CJ 260</td>
<td>Physical Evidence/Criminalistics</td>
</tr>
<tr>
<td>CJ 286</td>
<td>Criminal Law Administration</td>
</tr>
<tr>
<td>CS 100</td>
<td>Intro to Information Systems</td>
</tr>
</tbody>
</table>

Justice Administration & Corporate Security & Investigation pathways

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ &amp; 110</td>
<td>Criminal Law</td>
</tr>
<tr>
<td>CJ 154</td>
<td>The American Legal System</td>
</tr>
<tr>
<td>CJ 181</td>
<td>Report Writing for Law Enforcement</td>
</tr>
<tr>
<td>POLS&amp; 202</td>
<td>American Government</td>
</tr>
<tr>
<td>POLS 220</td>
<td>The Law and Social Issues</td>
</tr>
</tbody>
</table>

Cyber Forensic Investigation pathway

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 102</td>
<td>Web Page Design</td>
</tr>
<tr>
<td>CS 130</td>
<td>Intro/Database Applications</td>
</tr>
<tr>
<td>CS 170</td>
<td>Programming Fundamentals</td>
</tr>
<tr>
<td>CS 211</td>
<td>Networking Basics</td>
</tr>
<tr>
<td>CS 212</td>
<td>Local Area Networks: Theory &amp; App</td>
</tr>
<tr>
<td>CS 213</td>
<td>Local Area Networks: Theory &amp; App</td>
</tr>
<tr>
<td>CS 250</td>
<td>Digital Forensics &amp; Law</td>
</tr>
</tbody>
</table>

Students completing this program should acquire the following skills and abilities:

- Effectively communicate in writing.
- Prepare to take the Civil Service test.
- Understand the function of the legal system from the civil and criminal justice perspective.
- Apply basic investigative techniques in gathering and identifying crime scene evidence.
- Gain insight and awareness of the essential elements of community policing and problem solving.
- Understand how our criminal justice system evolved and how it functions.
- Identify and examine how the various agencies involved in the administration of justice interact.
- Demonstrate and explain the principles of criminal law including crimes against persons and property.
Associate in Applied Science - Transfer
CRIMINAL JUSTICE Pathway for City University of Seattle

Modern law enforcement is a highly competitive career field. The more education you have, the better your chance of employment and advancement. Prepare for entry-level employment in law enforcement agencies and in some correctional facilities with an Associate in Applied Science degree in Criminal Justice. People working within those areas can use the program to enhance their skills.

Degree Requirements

To earn an Associate in Applied Science – Criminal Justice degree, you must complete a minimum of 90 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking.

Quantitative Skills: 5 credits - MATH& 125 OR higher

Social Sciences: 5 credits - CJ & 101

Humanities: 5 credits – PHIL 210 OR HUM 104

Natural Sciences: 10 credits - from the distribution list for Professional/Technical degrees for Natural Science classes that meet this requirement.

Diversity: 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 Intro to Sociology: DIV.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Program Requirements:  

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CJ 183*</td>
<td>The Administration of Justice</td>
</tr>
<tr>
<td>CJ 260*</td>
<td>Physical Evidence &amp; Criminalistics</td>
</tr>
<tr>
<td>CJ 286</td>
<td>Criminal Law Administration</td>
</tr>
<tr>
<td>CS 100</td>
<td>Intro to Information Systems</td>
</tr>
</tbody>
</table>

Electives: 25 credits. See advisor.

Recommended Electives:

Justice Administration & Corporate Security & Investigation pathways
- CJ & 110* Criminal Law 5
- CJ 154* The American Legal System 5
- CJ 181 Report Writing for Law Enforcement 3
- POLS& 202 American Government 5
- POLS 220 The Law and Social Issues 5

Cyber Forensic Investigation pathway
- CS 102 Web Page Design 5
- CS 130 Intro/Database Applications 5
- CS 170 Programming Fundamentals 5
- CS 211 Networking Basics 5
- CS 212 Local Area Networks: Theory & App 5
- CS 213 Local Area Networks: Theory & App 5
- CS 250 Digital Forensics & Law 5

Full-time law enforcement officers who have completed the training commission curriculum and are enrolled in the Criminal Justice program may waive three of the courses marked with asterisks (*) and substitute CJ 100 – Basic Law Enforcement for three courses. The training commission curriculum consists of 450 hours of classroom instruction.

Total credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Effectively communicate in writing.
- Prepare to take the Civil Service test.
- Understand the function of the legal system from the civil and criminal justice perspective.
- Apply basic investigative techniques in gathering and identifying crime scene evidence.
- Gain insight and awareness of the essential elements of community policing and problem solving.
- Understand how our criminal justice system evolved and how it functions.
- Identify and examine how the various agencies involved in the administration of justice interact.
- Demonstrate and explain the principles of criminal law including crimes against persons and property.
Certificate of Proficiency
HEAVY EQUIPMENT PREVENTATIVE MAINTENANCE

The Heavy Equipment Preventative Maintenance program prepares students for careers in any industry that utilizes trucks, excavators, bulldozers, vessels or any other industrial equipment utilizing diesel power, hydraulics or other mechanical power transmission devices. This certificate is a shorter route to entry-level jobs.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements
To earn a Heavy Equipment Preventative Maintenance Certificate of Proficiency, you must complete a minimum of 60 credits. The credits must include the following:

Communications: 5 credits – ENGL 110 Industrial Communications.

Quantitative Skills: 5 credits – MATH 078/079 Pre-College Math I OR higher.

Human Relations/ Social Science: 5 credits – BUS 144 Management of Human Relations recommended.

Program Requirements: 45 credits
Any DHET courses approved by the program advisor.

Total credits required to earn this certificate: 60

Students completing this program should acquire the following skills and abilities:

- Understand the importance of completing tasks in an accurate and timely manner
- Demonstrate the ability to accurately follow service information procedures
- Understand the importance of attitude, teamwork and communication skills in industry
- Demonstrate the ability to accurately document work performed.

- Demonstrate the skills needed to troubleshoot and repair selected mechanical systems from the following list:
  Hydraulic, Electrical, Air and Hydraulic brakes, Engines, Power Transmission, Chassis, and Air Conditioning
Associate in Applied Science

DIESEL/HEAVY EQUIPMENT TECHNOLOGY

The Diesel/Heavy Equipment Technology program prepares students for careers in any industry that utilizes trucks, heavy equipment, vessels or any other industrial equipment utilizing diesel power, hydraulics or other mechanical power transmission devices. Some of the many different areas of graduate employment include trucking firms, heavy equipment dealerships, logging companies, railroads, tug boats, industrial maintenance and sales.

With a strong emphasis on fluid power, LCC’s Diesel/Heavy Equipment Technology program is one of few accepted for membership in the National Fluid Power Association. Students may enter the program any quarter and may transfer to pursue a bachelor’s degree in Diesel Power at several baccalaureate institutions.

Degree Requirements

To earn an Associate in Applied Science - Diesel/Heavy Equipment degree, you must complete a minimum of 120 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 5 credits – Choose from ENGL 099 (was ENGL 100), 110 ENGL& 101, 102, BUS 119, or SPCH 110. ENGL 110 Industrial Communications recommended.

Health: 3 credits – HLTH 100 Occupational Safety and Health.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II OR higher. (MATH 106 Industrial Mathematics recommended)

Human Relations/Social Science: 5 credits – BUS 144 Management of Human Relations:DIV recommended. BUS 144 satisfies the Human Relations, Social Science, and Diversity requirements for this degree.


Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: BUS 144 - Management of Human Relations:DIV.

Program Requirements:

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHET 100*</td>
<td>5</td>
</tr>
<tr>
<td>DHET 101</td>
<td>5</td>
</tr>
<tr>
<td>DHET 102</td>
<td>10</td>
</tr>
<tr>
<td>DHET 104</td>
<td>6</td>
</tr>
<tr>
<td>DHET 111</td>
<td>5</td>
</tr>
<tr>
<td>DHET 115</td>
<td>5</td>
</tr>
<tr>
<td>DHET 125</td>
<td>5</td>
</tr>
<tr>
<td>DHET 141</td>
<td>4</td>
</tr>
<tr>
<td>DHET 142</td>
<td>6</td>
</tr>
<tr>
<td>DHET 210</td>
<td>16</td>
</tr>
<tr>
<td>DHET 215</td>
<td>15</td>
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<tr>
<td>DHET 220</td>
<td>10</td>
</tr>
<tr>
<td>DHET 230</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives may be selected from the following courses to meet individual needs:

DHET 216, DHET 228, MASP 107, WELD 105, WELD 151, WELD 152, WELD 221

*Program advisor may recommend substituting COLL 100 (College Success) if student has basic mechanical experience.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Total credits required to earn this degree: 120

Students completing this program should acquire the following skills and abilities:

- Understand the importance of completing tasks in an accurate and timely manner
- Demonstrate the ability to accurately document work performed.
- Demonstrate the ability to accurately follow service information procedures
- Understand the importance of attitude, teamwork and communication skills in industry
- Demonstrate the skills needed to troubleshoot and repair the following mechanical systems: Hydraulic, Electrical, Air and Hydraulic brakes, Engines, Power Transmission, Chassis, and Air Conditioning
Dramatic experience provides insights into the complex motivation for human behavior. Students interested in acting can complete an associate degree or begin studies to transfer to a baccalaureate program. Drama courses can also be an important supplement for those who plan to major in the humanities or social sciences.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher with the exception of MATH& 131.

**Humanities:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits in any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. PSYC, SOC, and POLS are recommended disciplines.

**Natural Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

**Diversity:** 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: DRMA& 101 - Introduction to Theatre:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRMA&amp; 101</td>
<td>5</td>
</tr>
<tr>
<td>DRMA 106/7/8</td>
<td>5 ea</td>
</tr>
<tr>
<td>DRMA 206/7/8</td>
<td>5 ea</td>
</tr>
<tr>
<td>DRMA 116/7/8</td>
<td>5 ea</td>
</tr>
<tr>
<td>DRMA 119</td>
<td>5</td>
</tr>
<tr>
<td>DRMA 196/7/8</td>
<td>5 ea</td>
</tr>
<tr>
<td>DRMA 296/7/8</td>
<td>5 ea</td>
</tr>
</tbody>
</table>

Diversity classes and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Understand the complex nature of theatre both technical and artistic.
ASSOCIATE IN BIOENGINEERING AND CHEMICAL PRE-ENGINEERING Academic Plan

Complete basic background studies for transfer to a bachelor’s degree program in engineering disciplines. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

Degree Requirements

To earn an Associate in Bioengineering and Chemical Pre-Engineering-AS-T Bio/Chem E/MRP degree, you must complete a minimum of 90 credits in transferable courses with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I


Humanities/Social Science: 15 credits – minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science from the distribution list for transfer degrees. ECON& 201 or 202 recommended.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

Pre-Major Requirements: 40 credits

*It is recommended that sequence courses be completed at one institution.

Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM&amp; 161*</td>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td>General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 261*</td>
<td>Organic Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 211*</td>
<td>Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 262*</td>
<td>Organic Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 221*</td>
<td>Engr Physics I w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td>Engr Physics II w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 223*</td>
<td>Engr Physics III w/Lab</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives: 5 credits minimum – select electives with the help of an advisor based on the requirements of the specific discipline at the baccalaureate institution the student plans to attend.

Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 211*</td>
<td>Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 212*</td>
<td>Majors Biology Animal</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 262*</td>
<td>Organic Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 263*</td>
<td>Organic Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>CS 170</td>
<td>Computer Programming</td>
<td>5</td>
</tr>
<tr>
<td>ENGL&amp; 235</td>
<td>Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 204</td>
<td>Electrical Circuits</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 224</td>
<td>Thermodynamics</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 254* (was MATH 154)</td>
<td>Calculus IV</td>
<td>5</td>
</tr>
<tr>
<td>MATH 220</td>
<td>Linear Algebra</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Demonstrate the ability to use foundational knowledge in mathematics, physics, chemistry, and biology.
- Design and conduct experiments.
- Make measurements, analyze data, and interpret results.
- Problem solving, team, self-assessment and lifelong learning skills.
- Communicate effectively.

Revised March 18, 2013
AS-T COMP E EE/MRP
ASSOCIATE IN COMPUTER AND ELECTRICAL PRE-ENGINEERING Academic Plan

Complete basic background studies for transfer to a bachelor’s degree program in computer and electrical engineering disciplines. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

Degree Requirements

To earn an Associate in Computer and Electrical Pre-Engineering-AS-T Comp E EE/MRP degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 5 credits - ENGL 101 English Comp I

Humanities/ Social Science: 15 credits - minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science from the distribution list for transfer degrees. ECON 201 or 202 recommended.

Diversity: 5 credits - from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC 101 - Intro to Sociology:DIV.

Pre-Major Requirements: 41 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 161*</td>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CS 170</td>
<td>Computer Programming</td>
<td>5</td>
</tr>
<tr>
<td>CS 270</td>
<td>Data Structures</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 221*</td>
<td>Engr Physics I w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 222*</td>
<td>Engr Physics II w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 223*</td>
<td>Engr Physics III w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 204</td>
<td>Electrical Circuits</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives: 10 credits minimum - select electives appropriate for your intended major and intended baccalaureate institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 211</td>
<td>Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 162*</td>
<td>General Chemistry 2/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 235</td>
<td>Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 205**</td>
<td>Design of Logic Circuits</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 214</td>
<td>Statics</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 215</td>
<td>Dynamics</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 224</td>
<td>Thermodynamics</td>
<td>5</td>
</tr>
<tr>
<td>MATH 254* (was MATH 154)</td>
<td>Calculus IV</td>
<td>5</td>
</tr>
</tbody>
</table>

**Required for WSU-V

Minimum transferable credits required to earn this degree: 90

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Demonstrate the ability to use foundational knowledge in mathematics, physics, chemistry, and biology.
- Design and conduct experiments.
- Make measurements, analyze data, and interpret results.
- Problem solving, team, self-assessment and lifelong learning skills.
- Communicate effectively.

Revised March 13, 2014

lowercolumbia.edu 360.442.2311 toll-free 1.866.900.2311
 Associate in Arts – Direct Transfer Agreement

EARLY CHILDHOOD EDUCATION Academic Plan

This is a full-time program that provides the student with both academic coursework and preschool and public school experience necessary to become a beginning teacher of children ages birth to 5 years. The program allows the student to experience working with young children and their mentor teachers. The program includes teaching methods in reading and language arts, mathematics, science, social studies, children's literature and materials, and expressive arts. The foundation for the methods classes are theory classes, with emphasis placed on educational foundations, child development and psychology, nutrition, families, communities, schools and other agencies. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System.

See http://www.del.wa.gov/requirements/info/background.aspx

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

- **Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher with the exception of MATH& 131.

- **Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

- **Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. PSYC, SOC, and POLS are recommended disciplines.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Natural Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math or Engineering courses. ANTH& 205 and BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: EDUC& 205 Intro to Education w/Field Experience: DIV.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 100</td>
<td>Child Care Basics</td>
</tr>
<tr>
<td>ECED&amp; 105</td>
<td>Intro to Early Childhood Ed</td>
</tr>
<tr>
<td>ECED&amp; 160</td>
<td>Curriculum Development</td>
</tr>
<tr>
<td>EDUC&amp; 130</td>
<td>Guiding Behavior</td>
</tr>
<tr>
<td>EDUC&amp; 150</td>
<td>Child/Family/Community</td>
</tr>
<tr>
<td>EDUC&amp; 203</td>
<td>Exceptional Child</td>
</tr>
<tr>
<td>EDUC&amp; 205</td>
<td>Intro to Education w/Field Exp:DIV</td>
</tr>
<tr>
<td>EDUC 215</td>
<td>Classroom Management</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children's self-esteem, social-emotional development, and problem-solving skills.
- Demonstrate the ability to use theory, research, developmentally appropriate practice and a variety of instructional strategies when planning and implementing curriculum.
- Use individual and group guidance and problem-solving techniques to support positive relationships with children assisting their development in self-esteem, self control, and self motivation.
- Establish a partnership with families, providing information and resources, strengthening the home to school connection.
- Create an anti-biased, culturally relevant environment/curriculum, embracing the multi-faceted term diversity, which includes, but is not exclusive to race, ethnicity, family diversity, and learning styles.
- Develop personally and professionally, maintaining current knowledge in the field and participating in on-going professional development.
- Communicate effectively through the spoken and written word and through visual materials for varied audiences and purposes.
- Gather empirical data employing a variety of observation and assessment tools, and analyze data with the purpose of developing age and developmentally appropriate curriculum.
- Utilize a variety of contemporary research strategies; evaluate the validity of sources, and credit ideas or sources appropriately.
**Associate in Applied Science**

**EARLY CHILDHOOD EDUCATION**

This degree articulates to WSU-V's BA in Human Development. This is a full-time program that provides the student with both academic coursework and preschool and public school experience necessary to become a beginning teacher of children ages birth to 5 years. The program allows the student to experience working with young children and their mentor teachers. The program includes teaching methods in reading and language arts, mathematics, science, social studies, children’s literature and materials, and expressive arts. The foundation for the methods classes are theory classes, with emphasis placed on educational foundations, child development and psychology, nutrition, families, communities, schools and other agencies. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See [http://www.del.wa.gov/requirements/info/background.aspx](http://www.del.wa.gov/requirements/info/background.aspx)

### Degree Requirements

To earn an Associate in Applied Science – Early Childhood Education degree, you must complete a **minimum of 93 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 10 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II OR SPCH 110 Intro to Public Speaking.

**Quantitative Skills:** 5 credits – MATH 098/099 Pre-College Math III OR higher OR BUS 104 Business Math Applications.

**Human Relations/ Social Sciences:** 10 credits – PSYC& 100 General Psychology AND PSYC& 200 Lifespan Psychology.

**Humanities/ Natural Sciences:** 5 credits – Selected from the distribution list for Professional/Technical degrees.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. EDUC& 205 Intro to Education with Field Experience:DIV is recommended.

### Program Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105</td>
<td>Intro Early Childhood Ed</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp;107</td>
<td>Health/Safety Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120</td>
<td>Practicum/Nurturing Relationships</td>
<td>2</td>
</tr>
<tr>
<td>ECED&amp; 160</td>
<td>Curriculum Development</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 170</td>
<td>environments f/Young Children</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 180</td>
<td>Lang/Literacy Develop</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 190</td>
<td>Observation/Assessment</td>
<td>3</td>
</tr>
<tr>
<td>ECED 204</td>
<td>Music and Movement</td>
<td>3</td>
</tr>
<tr>
<td>ECED 219</td>
<td>Math, Science, Computers</td>
<td>3</td>
</tr>
<tr>
<td>ECED 220</td>
<td>Arts and Crafts for Young Children</td>
<td>3</td>
</tr>
<tr>
<td>ECED 261</td>
<td>Practicum IV/Principles</td>
<td>3</td>
</tr>
<tr>
<td>ECED 262</td>
<td>Practicum V/Practice</td>
<td>3</td>
</tr>
<tr>
<td>ECED 263</td>
<td>Practicum VI/Professionalism</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 115</td>
<td>Child Development</td>
<td>5</td>
</tr>
<tr>
<td>EDUC&amp; 130</td>
<td>Guiding Behavior</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 150</td>
<td>Child/Family/Community</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 203</td>
<td>Exceptional Child</td>
<td>3</td>
</tr>
</tbody>
</table>

### Total credits required to earn this degree: 93

**Students completing this program should acquire the following skills and abilities:**

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.
- Demonstrate the ability to use theory, research, developmentally appropriate practice and a variety of instructional strategies when planning and implementing curriculum.
- Use individual and group guidance and problem-solving techniques to support positive relationships with children assisting their development in self-esteem, self control, and self motivation.
- Establish a partnership with families, providing information and resources, strengthening the home to school connection.
- Create an anti-biased, culturally relevant environment/curriculum, embracing the multi-faceted term diversity, which includes, but is not exclusive to race, ethnicity, family diversity, and learning styles.
- Develop personally and professionally, maintaining current knowledge in the field and participating in on-going professional development.
- Communicate effectively through the spoken and written word and through visual materials for varied audiences and purposes.
- Gather empirical data employing a variety of observation and assessment tools, and analyze data with the purpose of developing age and developmentally appropriate curriculum.
- Utilize a variety of contemporary research strategies; evaluate the validity of sources, and credit ideas or sources appropriately.
EARLY CHILDHOOD EDUCATION

This is a full-time program that provides the student with both academic coursework and preschool and public school experience necessary to become a beginning teacher of children ages birth to 5 years. The program allows the student to experience working with young children and their mentor teachers. The program includes teaching methods in reading and language arts, mathematics, science, social studies, children's literature and materials, and expressive arts. The foundation for the methods classes are theory classes, with emphasis placed on educational foundations, child development and psychology, nutrition, families, communities, schools and other agencies. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See http://www.del.wa.gov/requirements/info/background.aspx

Degree Requirements

To earn an Associate in Applied Science - Transfer – Early Childhood Education degree, you must complete a minimum of 100 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking.

Quantitative Skills: 10 credits – MATH& 131 Math for Elementary Education I AND MATH& 132 Math for Elementary Education II.

Humanities: 10 credits – DRMAG 101 Intro to Theatre AND MUSC 100 Fundamentals of Music.

Natural Sciences: 5 credits – Must be a Natural Science with lab course. Choose one of the following: BIOL 109 Energy and Life OR ERSI 109 Intro to Earth Sciences OR PHSC 109 Energy and Matter:Physical Sciences.

Social Science: 10 credits – PSYC& 100 General Psychology AND PSYC& 200 Lifespan Psychology.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: EDUC& 205 Intro to Ed w/Field Exp:DIV. Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Program Requirements:

50 credits required from the following specified critical content areas: (a minimum of 3 – 5 credits from each area)

Child Development & Learning-Typical & Atypical
EDUC& 105 Intro to Early Childhood Education 5
EDUC& 115 Child Development 5
EDUC& 203 Exceptional Child 3
Child Guidance
EDUC& 130 Guiding Behavior 3
Family & Community Relationships
EDUC& 150 Child/Family/Community 3
Diversity, Inclusion, Multicultural
EDUC& 205 Intro to Education with Field Experience 5
Health, Safety, and Nutrition
ECED&107 Health, Safety, and Nutrition/Young Child 5
Observation, Assessment, and Evaluation
ECED& 190 Observation/Assessment 3
Professionalism
ECED 209 ECED Mentor Development 1
ECED& 160 ECED Curriculum Development 5
Practicum/Field Experience
(300 hours minimum suggested)
ECED 261 Practicum IV/Principles 3
ECED 262 Practicum V/Practice 3
ECED 263 Practicum VI/Professionalism 3
Curriculum Development & Implementation
ECED& 180 Lang/Literacy Development 3
ECED 219 Math, Science, and Computers 3
ECED 220 Arts & Crafts for Young Children 3

Total credits required to earn this degree: 100

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children's self-esteem, social-emotional development, and problem-solving skills.
- Demonstrate the ability to use theory, research, developmentally appropriate practice and a variety of instructional strategies when planning and implementing curriculum.
- Use individual and group guidance and problem-solving techniques to support positive relationships with children assisting their development in self-esteem, self control, and self motivation.
- Establish a partnership with families, providing information and resources, strengthening the home to school connection.
- Create an anti-biased, culturally relevant environment/curriculum, embracing the multi-faceted term diversity, which includes, but is not exclusive to race, ethnicity, family diversity, and learning styles.
- Develop personally and professionally, maintaining current knowledge in the field and participating in on-going professional development.
- Communicate effectively through the spoken and written word and through visual materials for varied audiences and purposes.
- Gather empirical data employing a variety of observation and assessment tools, and analyze data with the purpose of developing age and developmentally appropriate curriculum.
- Utilize a variety of contemporary research strategies; evaluate the validity of sources, and credit ideas or sources appropriately.
State Short Early Childhood Education Certificate of Specialization-Administration

LCC’s State Short Early Childhood Education Certificate of Specialization-Administration program provides the coursework for students to achieve level 6 on the Career Lattice. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating system.

Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT system. See http://www.del.wa.gov/requirements/info/background.aspx

Certificate Requirements

To earn an Early Childhood Education-Administration Short State Certificate of Specialization, you must complete a minimum of 20 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105 Intro to Early Childhood Education</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107 Health/Safety/Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120 Practicum-Nurturing Relationships</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 115 Child Development</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 139 Administration Early Learning Prog</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 20

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.

Revised May 2014
Associate in Applied Science – Transfer

EARLY CHILDHOOD EDUCATION
Concordia University

This is a full-time program that provides the student with both academic coursework and preschool and public school experience necessary to become a beginning teacher of children ages birth to 5 years. The program allows the student to experience working with young children and their mentor teachers. The program includes teaching methods in reading and language arts, mathematics, science, social studies, children’s literature and materials, and expressive arts. The foundation for the methods classes are theory classes, with emphasis placed on educational foundations, child development and psychology, nutrition, families, communities, schools and other agencies. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT system. See http://www.del.wa.gov/requirements/info/background.aspx

Degree Requirements
To earn an Associate in Applied Science - Transfer – Early Childhood Education degree to Concordia University, you must complete a minimum of 92 - 99 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 10 credits - ENGL& 101 English Composition I AND SPCH 110 Intro to Public Speaking.

Quantitative Skills: 5 credits – College level Math course. See advisor for options.


Natural Sciences: 10 credits – from the distribution list for transfer degrees. Must have one 5 credit class with lab.

Social Science: 10 credits – PSYC& 100 General Psychology AND 5 credits of U.S. History or Sociology.

Human Relations: 2-5 credits – Choose from: ANTH& 206, BUS 144, 150, 240, CDS 102, 215, EDUC& 130 (was ECED 119), HDEV 110, PSYC 204, 214, SOC& 101, or SPCH 104.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Education Requirements 41 - 45 credits:

ECED& 105 Intro to Early Childhood Education 5
ECED& 180 Lang/Literacy Development 3
ECED& 190 Observation/Assessment 3
ECED 204 Music & Movement 3
ECED 160 Curriculum Development 5
ECED 220 Arts & Crafts for Young Children 3
ECED 261 Practicum IV/Principles 3
ECED 262 Practicum V/Practice 3
ECED 263 Practicum VI/Professionalism 3
EDUC& 115 Child Development 5
EDUC& 130 Guiding Behavior 3
EDUC& 150 Child/Family/Community 3
EDUC& 203 Exceptional Child 3

PHED 152/252 Personalized Fitness OR 4
HLTH 106 Health Today AND 2
any college level PHED activity course 2

Total credits required to earn this degree: 92-99

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.
- Demonstrate the ability to use theory, research, developmentally appropriate practice and a variety of instructional strategies when planning and implementing curriculum.
- Use individual and group guidance and problem-solving techniques to support positive relationships with children assisting their development in self-esteem, self control, and self motivation.
- Establish a partnership with families, providing information and resources, strengthening the home to school connection.
- Create an anti-biased, culturally relevant environment/curriculum, embracing the multi-faceted term diversity, which includes, but is not exclusive to race, ethnicity, family diversity, and learning styles.
- Develop personally and professionally, maintaining current knowledge in the field and participating in on-going professional development.
- Communicate effectively through the spoken and written word and through visual materials for varied audiences and purposes.
- Gather empirical data employing a variety of observation and assessment tools, and analyze data with the purpose of developing age and developmentally appropriate curriculum.
- Utilize a variety of contemporary research strategies; evaluate the validity of sources, and credit ideas or sources appropriately.
State Short Early Childhood Education Certificate of Specialization-Family Child Care

LCC’s State Short Early Childhood Education Certificate of Specialization-Family Child Care program provides the coursework for students to achieve level 6 on the Career Lattice. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating system. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT system. See [http://www.del.wa.gov/requirements/info/background.aspx](http://www.del.wa.gov/requirements/info/background.aspx)

Certificate Requirements

To earn An Early Childhood Education-Family Child Care Short State Certificate of Specialization, you must complete a **minimum of 20 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105 Intro to Early Childhood Education</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107 Health/Safety/Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120 Practicum-Nurturing Relationships</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 115 Child Development</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 134 Family Child Care</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 20**

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.
Certificate of Completion

EARLY CHILDHOOD EDUCATION
- INFANT/ TODDLER

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

LCC’s Early Childhood Infant/Toddler Certificate of Completion program allows students to earn a one-year certificate with an emphasis on the competencies necessary to work with infants, toddlers and families as outlined in the Washington State Core Competencies for Early Care and Education Professionals. All courses meet the current STARS criteria. This certificate addresses specific infant/toddler competencies in the following content areas: Child Growth & Development, Curriculum and Learning Environment, Ongoing Measurement of Child Progress, Families and Community Partnerships, Health, Safety and Nutrition, Supportive Interactions, Program Planning and Development, and Professional Development and Leadership. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See http://www.del.wa.gov/requirements/info/background.aspx

Certificate Requirements

To earn An Early Childhood Infant/Toddler Certificate of Completion, you must complete a **minimum of 44 credits**: The credits must include the following:

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 137</td>
<td>Infant/Toddler Hlthy Physical Dev</td>
<td>1</td>
</tr>
<tr>
<td>ECED&amp; 138</td>
<td>Infant/Toddler Responsive Learning Environments</td>
<td>1</td>
</tr>
<tr>
<td>ECED&amp; 100</td>
<td>Child Care Basics</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 107</td>
<td>Health, Safety, and Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 105</td>
<td>Intro to Early Childhood Education</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 132</td>
<td>Infants/Toddler Care</td>
<td>3</td>
</tr>
<tr>
<td>ECED 186</td>
<td>Social-Emotional Growth &amp; Socialization</td>
<td>3</td>
</tr>
<tr>
<td>ECED 187</td>
<td>Cognitive &amp; Language Development</td>
<td>3</td>
</tr>
<tr>
<td>ECED 188</td>
<td>Group Care for Infants/Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 190</td>
<td>Observation/Assessment</td>
<td>3</td>
</tr>
<tr>
<td>ECED 204</td>
<td>Music &amp; Movement</td>
<td>3</td>
</tr>
<tr>
<td>ECED 220</td>
<td>Arts &amp; Crafts</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 115</td>
<td>Child Development</td>
<td>5</td>
</tr>
<tr>
<td>EDUC&amp; 130</td>
<td>Guiding Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 44**

**Students completing this program should acquire the following skills and abilities:**

- Recognize that interaction with people and the environment stimulates the child’s brain function.
- Identifies development stages or milestones of infant development from birth through 36 months as identified in the Washington State Early Learning & Development Guidelines.
- Provides for a balance of infant-led and caregiver/teacher-guided activities.
- Understand and build curriculum based on different learning need of infants & toddlers.
- Communicate major theories, research and issues relevant to infant/toddler early care and education.
- Evaluate the effectiveness and appropriateness of physical development activities for infants and toddlers.
- Recognize states of infant alertness and their readiness to interact with others.
- Recognize that infants and toddlers have a culturally-based approach to learning.
- Recognize opportunities for language and communication activities.
- Recognize, support, and articulate the importance of attachment in caring for infant/toddlers.
- Develop, implement, and monitor individual child goals based on observation, assessment and parental input.
- Involve and support families in development of Individualized Family Service Plans (IFSP).
- Articulate the various theories of family systems and the effect of stress and crisis on families and their children.
- Apply knowledge of federal, state, and local legislation, regulations, and professional standards to provide healthy and safe practices for infants and toddlers.
- Maintain appropriate expectations of infant/toddler attention spans, interests, social abilities, and physical needs.
- Articulate a professional value system and implement ongoing professional self-reflection.
State Short Early Childhood Education Certificate of Specialization-Infants and Toddlers

LCC’s State Short Early Childhood Education Certificate of Specialization-Infants and Toddlers program provides the coursework for students to achieve level 6 on the Career Lattice. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating system. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System.

See [http://www.del.wa.gov/requirements/info/background.aspx](http://www.del.wa.gov/requirements/info/background.aspx)

Certificate Requirements

To earn An Early Childhood Education-Infant & Toddler Care Short State Certificate of Specialization, you must complete a **minimum of 20 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105 Intro to Early Childhood Education</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107 Health/Safety/Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120 Practicum-Nurturing Relationships</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 115 Child Development</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 132 Infants/Toddler Care</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 20**

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.

Revised May 2014
State Initial Early Childhood Education Certificate

LCC’s State Initial Early Childhood Education Certificate programs allow you to earn basic credentials for job opportunities quickly, then build on them for higher level credentials and job opportunities. The coursework in this certificate enables students to achieve level 5 on the Career Lattice. This certificate is the first level in the statewide one-year certificate. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating System. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See http://www.del.wa.gov/requirements/info/background.aspx

Certificate Requirements

To earn An Early Childhood Education-Initial State Certificate of Completion, you must complete a minimum of 12 credits. The credits must include the following:

Program Requirements:  
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105</td>
<td>Intro to Early Childhood Educ.</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107</td>
<td>Health, Safety, and Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120</td>
<td>Practicum</td>
<td>2</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 12

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.
State Short Early Childhood Education Certificate of Specialization-School Age Care

LCC’s State Short Early Childhood Education Certificate of Specialization-School Age Care program provides the coursework for students to achieve level 6 on the Career Lattice. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating system. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See [http://www.del.wa.gov/requirements/info/background.aspx](http://www.del.wa.gov/requirements/info/background.aspx)

Certificate Requirements

To earn an Early Childhood Education-School Age Care Short State Certificate of Specialization, you must complete a **minimum of 20 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105 Intro to Early Childhood Education</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107 Health/Safety/Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120 Practicum-Nurturing Relationships</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 115 Child Development</td>
<td>5</td>
</tr>
<tr>
<td>EDUC&amp; 136 School Age Care</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 20**

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.
LCC’s State Short Early Childhood Education Certificate of Specialization-General program provides the coursework for students to achieve level 6 on the Career Lattice. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating system. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See [http://www.del.wa.gov/requirements/info/background.aspx](http://www.del.wa.gov/requirements/info/background.aspx)

Certificate Requirements

To earn an Early Childhood Education-Early Childhood General Short State Certificate of Specialization, you must complete a **minimum of 20 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Program Requirements:</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105 Intro to Early Childhood Education</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107 Health/Safety/Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120 Practicum-Nurturing Relationships</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 115 Child Development</td>
<td>5</td>
</tr>
<tr>
<td>EDUC&amp; 130 Guiding Behavior</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 20**

**Students completing this program should acquire the following skills and abilities:**

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.

Revised May 2014
State Early Childhood Education Certificate

LCC’s State Early Childhood Education Certificate provides the coursework for students to achieve level 7 on the Career Lattice. This certificate is the third level in the statewide one-year certificate. Built with Common Courses and Common Core Competencies, this certificate will transfer in and transfer to other community colleges in a seamless manner. Employees achieving this certificate will assist their centers in the Early Achievers Rating system. Students entering the Early Childhood Education Program must show evidence of a current TB test and obtain a cleared Portable Background check through Washington State Dept of Early Learning MERIT System. See http://www.del.wa.gov/requirements/info/background.aspx

Certificate Requirements

To earn An Early Childhood Education-State Credential Certificate of Proficiency, you must complete a minimum of 47 credits. The credits must include the following:

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECED&amp; 105</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 107</td>
<td>5</td>
</tr>
<tr>
<td>ECED&amp; 120</td>
<td>2</td>
</tr>
<tr>
<td>ECED&amp; 160</td>
<td>5</td>
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<tr>
<td>ECED&amp; 170</td>
<td>3</td>
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<td>ECED&amp; 180</td>
<td>3</td>
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<tr>
<td>ECED&amp; 190</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 150</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete one of the following content areas:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC&amp; 130 Guiding Behavior (ECED Gen)</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 132 Infants/Toddler Care (Inf/Tod Care)</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 136 School Age Care (School-Age Care)</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 134 Family Child Care (Family Child Care)</td>
<td>3</td>
</tr>
<tr>
<td>ECED&amp; 139 Admin Early Lrng Prog (Admin)</td>
<td>3</td>
</tr>
</tbody>
</table>

General Education Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 100 or higher College Ready English II or higher</td>
<td>5</td>
</tr>
<tr>
<td>MATH 107 or higher College Level Math</td>
<td>5</td>
</tr>
<tr>
<td>EDUC&amp; 115 Child Development</td>
<td>5</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 47

Students completing this program should acquire the following skills and abilities:

- Create and maintain a safe and healthy environment for young children.
- Demonstrate an understanding of how children differ in their development and approaches to learning and use this knowledge to provide opportunities supporting physical, social, emotional, and cognitive growth.
- Develop relationships with children enhancing children’s self-esteem, social-emotional development, and problem-solving skills.
- Use individual and group guidance and problem-solving techniques to support positive relationships with children assisting their development in self-esteem, self control, and self motivation.
- Gather empirical data employing a variety of observation and assessment tools, and analyze data with the purpose of developing age and developmentally appropriate curriculum.
- Utilize age appropriate music, art, and craft activities and ideas to foster the development of creativity, motor skills, and interpersonal skills in children.
- Create an anti-biased, culturally relevant environment modeling respect for the many facets that fall under the term “diversity”.
- Demonstrate the ability to use theory, research, developmentally appropriate practice and a variety of instructional strategies when planning and implementing curriculum.
- Utilize age appropriate math, science, computer, and literature activities and ideas to foster the development of language, communication, and basic numerical skills, creativity, and curiosity regarding math, science, and technology.
- Develop personally and professionally, maintaining current knowledge in the field and participating in on-going professional development.
Knowledge about the planet we inhabit, the surrounding universe and the natural forces that impact our world adds value to our daily lives and provides the basis for interesting careers in a broad range of disciplines: astronomy, geology, meteorology and oceanography. Begin studies for an advanced degree leading to positions with government agencies or private industry as an independent consultant, teacher, or researcher.

**Degree Requirements**

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to public Speaking OR SPCH 114 Small Group Communication.
- **Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher with the exception of MATH& 131.
- **Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed. Drawing or photography recommended.
- **Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.
- **Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and/or earth science are required. BIOL& 100 meets the laboratory requirement.
- **Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SPAN& 121 – Intro to Spanish I:DIV.
- **Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Natural Science and/or Elective Courses**

*It is recommended that sequence courses be completed at one institution.*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR&amp; 101</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 130</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 161*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td>5</td>
</tr>
<tr>
<td>ERSI 104</td>
<td>5</td>
</tr>
<tr>
<td>GEOL&amp; 101</td>
<td>5</td>
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<tr>
<td>GEOL 118</td>
<td>5</td>
</tr>
<tr>
<td>OCEA&amp; 101</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 141</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 142</td>
<td>5</td>
</tr>
</tbody>
</table>

**Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.**

**Minimum transferable credits required to earn this degree: 90**

**Students completing this program should acquire the following skills and abilities:**

- Interpret and use various kinds of maps, globes, charts, and graphs.
- Apply scientific knowledge and techniques to current environmental issues.
- Describe basic earth processes in an interdisciplinary context.
- Effectively communicate earth sciences concepts.
- Demonstrate familiarity with global and regional geology and geography.

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lowercolumbia.edu  360.442.2311  toll-free 1.866.900.2311

Revised May 2014
EARTH SCIENCES Academic Plan

Knowledge about the planet we inhabit, the surrounding universe and the natural forces that impact our world adds value to our daily lives and provides the basis for interesting careers in a broad range of disciplines: astronomy, geology, meteorology and oceanography. Begin studies for an advanced degree leading to positions with government agencies or private industry as an independent consultant, teacher, or researcher.

Degree Requirements

To earn an Associate in Sciences - Transfer degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I.

**Quantitative/ Symbolic Reasoning Skills:** 10 credits - MATH& 151* Calculus I AND MATH& 152* Calculus II.

**Humanities and Social Sciences:** 15 credits - Selected from at least three disciplines from the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.

**Diversity:** 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SPAN& 121 - Introduction to Spanish I:DIV.

**Pre-Major Requirements:** 50 credits

* It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM&amp; 161*</td>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163 *</td>
<td>General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>ERSI 104</td>
<td>Intro to Earth Sciences</td>
<td>5</td>
</tr>
<tr>
<td>GEOL&amp; 101</td>
<td>Intro Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td>OCEA&amp; 101</td>
<td>Intro to Oceanography OR</td>
<td>5</td>
</tr>
<tr>
<td>GEOL 118</td>
<td>Historical Geology</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td>Calculus III OR</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Elements of Statistics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 221*</td>
<td>Engr Physics I w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td>Engr Physics II w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 223*</td>
<td>Engr Physics III w/Lab</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:** At least 10 additional college-level credits to meet the 90 credit minimum. These remaining credits must include program advisor approved credits.

**Recommended electives:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH&amp; 141</td>
<td>Precalculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 142</td>
<td>Precalculus II</td>
<td>5</td>
</tr>
<tr>
<td>ASTR&amp; 101</td>
<td>Intro to Astronomy</td>
<td>5</td>
</tr>
<tr>
<td>OCEA&amp; 101</td>
<td>Intro to Oceanography</td>
<td>5</td>
</tr>
</tbody>
</table>

**Minimum transferable credits required to earn this degree:** 90

Students completing this program should acquire the following skills and abilities:

- Interpret and use various kinds of maps, globes, charts and graphs.
- Apply scientific knowledge and techniques to current environmental issues.
- Describe basic earth processes in an interdisciplinary context.
- Effectively communicate earth sciences concepts.
- Demonstrate familiarity with global and regional geology and geography.
Associate in Arts – Direct Transfer Agreement

ECONOMICS Academic Plan

Study the use of resources in relation to the production and distribution of wealth. Economics is important for those interested in a career in business, law, finance, government service and social service. Prepare to transfer to a baccalaureate institution in a variety of fields of study.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/ Symbolic Reasoning Skills: 5 credits - MATH& 107 or higher (excluding MATH& 131)

Humanities: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

Social Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. PSYC, SOC, and POLS are recommended.

Natural Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 Introduction to Sociology: DIV.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List on the distribution list for transfer degrees.

Recommended Elective Courses

ACCT& 201 Principles of Accounting I 5
ACCT& 202 Principles of Accounting II 5
ECON 105 Introduction to Economics 5
ECON& 201 Micro Economics 5
ECON& 202 Macro Economics 5
HIST& 137 U.S. History 2 5
MATH& 151 Calculus I 5
MATH& 152 Calculus II 5
POLS& 202 American Government 5
POLS& 203 International Relations 5
PSYC& 100 General Psychology 5

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Define scarcity and apply to the processes of production, distribution, and exchange.
- Define opportunity costs. Analyze the relationships between scarcity, costs, and the necessity for economic outcomes.
- Analyze market exchange through the equilibrium process and identify, describe, and explain price and output determination.

- Apply market exchange between individuals, business, government, and foreign markets to the economic choices available to individuals and society.
- Use economic models and theories to analyze economic data to draw logical conclusions about economic problems.
- Examine the impact of economic analysis on contemporary issues.
Associate in Arts – Direct Transfer Agreement

EDUCATION-SECONDARY Academic Plan

If you want to teach – at the elementary or high school level – begin your studies to complete a bachelor’s degree in general education or a specific subject area. See Biology, Chemistry, Mathematics, Physics and Science fields of study for programs in secondary education.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I  **AND** ENGL& 102 Composition II  **AND** SPCH 110 Intro to Public Speaking  **OR** SPCH 114 Small Group Communication.

Quantitative/Symbolic Reasoning Skills: 5 credits - MATH& 107 or higher (excluding MATH& 131).

Humanities: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed. ART& 100, MUSC 100 and PHIL& 101 recommended.

Natural Sciences: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. ANTH& 205 and BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

Social Sciences: 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. ANTH 109, PSYC& 100, and SOC& 101 recommended.

Diversity: 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: EDUC& 205 Intro to Education w/Field Experience:DIV

Electives: 25 credits - Students should begin taking courses in at least two subject areas in which they intend to teach. Some baccalaureate institutions require 3 credits of PHED. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC&amp; 114</td>
<td>Child Development</td>
<td>5</td>
</tr>
<tr>
<td>EDUC 140</td>
<td>Education and the Law</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 119</td>
<td>Curriculum &amp; Instruction</td>
<td>5</td>
</tr>
<tr>
<td>EDUC 150</td>
<td>Child/Family/Community</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 205</td>
<td>Intro to Education w/Field Exp</td>
<td>5</td>
</tr>
<tr>
<td>EDUC 206</td>
<td>Course Org &amp; Curriculum Dev</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 214</td>
<td>Instructional Strategies</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 215</td>
<td>Classroom Management</td>
<td>3</td>
</tr>
<tr>
<td>PSYC&amp; 200</td>
<td>Lifespan Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Utilize a variety of instructional strategies to assist k-12 students in their understanding of mathematical concepts.
- Develop skills to apply and teach scientific principles to young children.
- Evaluate and assess their own strengths as future teachers and make appropriate career plans.
- Construct cross curricular connections through integration of concepts and educational pedagogy.
- Examine a variety of teaching techniques, skills, and theories laying a foundation for future education courses.
- Develop a working knowledge of contemporary issues in education.
- Articulate the science of child development.
Certificate of Proficiency

PARAEDUCATOR

Prepare for entry-level employment with school districts with this certificate program of introductory courses. Students pursuing an apprenticeship program should contact an advisor for appropriate course offerings. By taking additional paraeducator preparation courses, you may also certify as a paraeducator, qualifying for employment by a school district, assisting certified teachers in classroom duties.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Paraeducator Certificate of Proficiency, you must complete a **minimum of 45-47 credits**. The credits must include the following:

**Communications:** 5 credits – ENGL 099 (was ENGL 100) College Ready English II OR ENGL& 101 English Composition I.

**Quantitative Skills:** 5 credits – MATH 098/099 Pre-College Math III OR MATH& 131 Math for Elementary Education I.

**Human Relations/Social Science:** 5 credits – PSYC& 100 General Psychology.

**Electives:** 3 or 5 credits from the following list:

- ART& 100 Art Appreciation 5
- ECED 204 Music & Movement/Young Child 3
- ECED 220 Arts and Crafts/Young Children 3
- MUSC 100 Fundamentals of Music 5

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 140</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 119</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 203</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 205</td>
<td>5</td>
</tr>
<tr>
<td>EDUC 214</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 215</td>
<td>3</td>
</tr>
<tr>
<td>PSYC&amp; 200</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 45-47**

Students completing this program should acquire the following skills and abilities:

- Demonstrate appropriate strategies and techniques to provide instructional support to students of diverse populations.
- Assist licensed/certified staff with student instruction, behavior management and classroom preparation.
- Apply best practices in classroom management to optimize the potential for student learning.
- Practice ethical and legal standards of conduct.
- Demonstrate competence in written and oral communication, reading, and mathematics.
ASSOCIATE IN ELECTRONICS ENGINEERING & COMPUTER ENGINEERING TECHNOLOGY

Academic Plan

Complete basic background studies for transfer to a bachelor’s degree program in electronics engineering and computer engineering technology disciplines. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

Degree Requirements

To earn an Associate in Electrical Engineering and Computer Engineering Technology-AS-T in EET/CET/MRP degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I.


Humanities/Social Science: 15 credits – minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science from the distribution list for transfer degrees.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

Pre-Major Requirements:

*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM&amp; 161*</td>
<td>5</td>
</tr>
<tr>
<td>CS 170</td>
<td>5</td>
</tr>
<tr>
<td>CS 270</td>
<td>5</td>
</tr>
<tr>
<td>CS 281</td>
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<tr>
<td>ENGL&amp; 235</td>
<td>5</td>
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<td>ENGR&amp; 204</td>
<td>5</td>
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<tr>
<td>PHYS&amp; 114*</td>
<td>5</td>
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<tr>
<td>PHYS&amp; 115*</td>
<td>5</td>
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<tr>
<td>PHYS&amp; 116*</td>
<td>5</td>
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<tr>
<td>PHYS&amp; 221*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 223*</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>5</td>
</tr>
</tbody>
</table>

(engineering physics preferred)

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Apply knowledge of mathematics, science and engineering
- Design and conduct experiments
- Analyze and interpret data
- Identify, formulate and solve engineering problems
- Communicate effectively
If you want to teach – at the elementary, middle, or high school level – begin your studies to complete a bachelor’s degree in general education or a specific subject area. See Biology, Chemistry, Mathematics, Physics and Science fields of study for programs in secondary education.

**Degree Requirements**

To qualify for an Associate in Arts degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 English Composition AND SPCH 110 Intro to Public Speaking. (These credits also meet City U’s Humanities requirements.)

**Quantitative/ Symbolic Reasoning Skills:** 10 credits - MATH& 131 AND MATH& 107 OR MATH 125 OR MATH& 132 OR MATH 210. Prior to enrolling in these courses, mastery of MATH 098/099 Pre-College Math I must be demonstrated through examination or completion of MATH 098/099 with a grade of C or better. (These credits also meet City U’s Natural Science/Math requirements.)

**Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 20 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. PSYC& 100 AND PSYCs 200 AND HIST& 126, 127, 128, 136 OR 137 AND 5 more credits from a different discipline.

**Natural Sciences:** 15 credits – One Life Science with lab AND one Physical Science with lab AND one other Natural Science. Natural Science courses shall be from three different disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Diversity:** 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. EDUC& 205 Intro to Education w/Field Experience:DIV recommended.

**Electives:** 10 credits - See advisor for approved list of electives. SOC& 101 Intro to Sociology recommended as one of the elective courses.

**Program:** 5 credits – EDUC& 205 Intro to Education w/Field Experience:DIV

**Academic Content Area:** 30 credits, including courses already listed, are required in one of the following areas: Humanities, Social Science, and Natural Science/Math.

**Other Pre-requisites:**
- Cumulative (transfer) GPA of at least 2.0
- Minimum of 80 hours of supervised work with children during the past three years
- Passing scores on the Washington Educators Skills Test-Basic (WEST-B) [www.west.nesinc.com]
- Computer Literacy – basic word processing, Internet skills, send/receive email.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Minimum transferable credits required to earn this degree: 90**

**Students completing this program should acquire the following skills and abilities:**

- Utilize a variety of instructional strategies to assist k-12 students in their understanding of mathematical concepts.
- Develop skills to apply and teach scientific principles to young children.
- Evaluate and assess their own strengths as future teachers and make appropriate career plans.
- Construct cross curricular connections through integration of concepts and educational pedagogy.
- Examine a variety of teaching techniques, skills, and theories laying a foundation for future education courses.
- Develop a working knowledge of contemporary issues in education.
- Articulate the science of child development.
Associate in Arts – Direct Transfer Agreement

EDUCATION-ELEMENTARY

Academic Plan (with Para Educator Certification)

Prepares students to work as Para Educators/Instructional Assistants in a K-12 system providing academic and social support to students. This degree program also meets all criteria for and prepares students to transfer to a teaching certification program in the state of Washington.

Degree Requirements

To earn an Associate in Arts - Direct Transfer Agreement degree, you must complete a minimum of 92 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/ Symbolic Reasoning Skills: 5 credits - MATH 099 or proficiency and one of the following: BUS 206, ENGR& 214 OR ENGR& 215, MATH& 107 or higher (excluding MATH& 131), or PHYS& 114, 115, 116, 221, 222, or 223. MATH& 132 recommended.

Humanities: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits in any one discipline. No more than 5 credits in performance skills courses are allowed. ART& 100, ENGL 260, HUM 164 and MUSC 100 are recommended courses.

Social Sciences: 20 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. PSYC& 100, 200, HIST& 136, 137, POLS& 202 or POLS 107 are recommended courses.

Natural Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: EDUC& 205 Education w/Field Experience:DIV.

Additional Requirements: 22 credits credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Apps</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 140</td>
<td>Education and the Law</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 119</td>
<td>Curriculum and Instruction</td>
<td>2</td>
</tr>
<tr>
<td>EDUC&amp; 203</td>
<td>Exceptional Child</td>
<td>3</td>
</tr>
<tr>
<td>EDUC&amp; 205</td>
<td>Intro to Education w/Field Exp:DIV</td>
<td>5</td>
</tr>
<tr>
<td>EDUC 214</td>
<td>Instructional Strategies</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 215</td>
<td>Classroom Management</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTES: The WEST-B test is required for admission to any Washington college or university education program. It is important that you make arrangements to take the test before the end of your final quarter at LCC.

Minimum transferable credits required to earn this degree: 92

Students completing this program should acquire the following skills and abilities:

- Utilize a variety of instructional strategies to assist K-12 students in their understanding of mathematical concepts.
- Develop skills to apply and teach scientific principles to young children.
- Evaluate and assess their own strengths as future teachers and make appropriate career plans.
- Construct cross curricular connections through integration of concepts and educational pedagogy.

- Examine a variety of teaching techniques, skills, and theories laying a foundation for future education courses.
- Develop a working knowledge of contemporary issues in education.
- Articulate the science of child development.
Associate in Arts – Direct Transfer Agreement

ELEMENTARY EDUCATION

Academic Plan (for students transferring to the WSU-Vancouver Elementary Education Program)

If you want to teach – at the elementary, middle, or high school level – begin your studies to complete a bachelor’s degree in general education or a specific subject area. See Biology, Chemistry, Mathematics, Physics and Science fields of study for programs in secondary education.

Degree Requirements

To earn this Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.5. See NOTES on page 2 for specific WSU-V requirements. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL 101 English Composition I AND ENGL 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/Symbolic Reasoning Skills: 10 credits – MATH 131 AND MATH 132. Prior to enrolling in these courses, mastery of Pre-College Math III must be demonstrated through examination or completion of MATH 099 with a grade of C or better.

Humanities: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: EDUC 205 Education w/Field Experience:DIV.

Electives: 10 credits – See advisor for approved list of electives. EDUC 205 Education w/Field Experience and HIST 136 U.S. History 1 are recommended.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Utilize a variety of instructional strategies to assist K-12 students in their understanding of mathematical concepts.
- Develop skills to apply and teach scientific principles to young children.
- Evaluate and assess their own strengths as future teachers and make appropriate career plans.
- Construct cross curricular connections through integration of concepts and educational pedagogy.
- Examine a variety of teaching techniques, skills, and theories laying a foundation for future education courses.
- Develop a working knowledge of contemporary issues in education.
- Articulate the science of child development.
Associate in Sciences – Transfer

ENGINEERING Academic Plan

Complete basic background studies for transfer to a bachelor’s degree program in engineering disciplines, including aeronautical, chemical, civil, computer, electrical, manufacturing and mechanical engineering. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

Degree Requirements

To earn an Associate in Sciences - Transfer degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 5 credits - ENGL 101 English Composition I.

Quantitative/Symbolic Reasoning Skills: 10 credits – MATH 151* Calculus I AND MATH 152* Calculus II.

Humanities and Social Sciences: 15 credits – Selected from at least three disciplines from the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science. ECON 201 or ECON 202 recommended for meeting Social Science requirement.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC 101 – Introduction to Sociology:DIV.

Pre-Major Requirements: 30 credits
*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 161*</td>
<td>5</td>
</tr>
<tr>
<td>CS 270</td>
<td>5</td>
</tr>
<tr>
<td>MATH 153*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 221*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 222*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 223*</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives: 30 additional college-level credits to meet the 90 credit minimum. These remaining credits must include program advisor help based on the requirements at the baccalaureate institution the student plans to attend.

Recommended electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 211</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 162*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 163*</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 235</td>
<td>5</td>
</tr>
<tr>
<td>ENGR 121*</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGR 122*</td>
<td>1-3</td>
</tr>
<tr>
<td>ENGR 123*</td>
<td>1-3</td>
</tr>
<tr>
<td>MATH 220</td>
<td>5</td>
</tr>
<tr>
<td>MATH 240</td>
<td>5</td>
</tr>
<tr>
<td>Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>Engineering Graphics I</td>
<td>1-3</td>
</tr>
<tr>
<td>Engineering Graphics II</td>
<td>1-3</td>
</tr>
<tr>
<td>Engineering Graphics III</td>
<td>1-3</td>
</tr>
<tr>
<td>Linear Algebra</td>
<td>5</td>
</tr>
<tr>
<td>Differential Equations</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Ability to apply knowledge of mathematics, science, and engineering.
- Ability to identify, formulate and solve engineering problems.
- Ability to use applied mathematical techniques.
- Ability to use modern engineering tools for practice at an introductory level.
- Ability to communicate effectively.
- Understanding of professional and ethical responsibility.

Revised July 19, 2012
ASSOCIATE IN MECHANICAL / CIVIL/ AERONAUTICAL/INDUSTRIAL/MATERIALS SCIENCE ENGINEERING Academic Plan

Complete basic background studies for transfer to a bachelor’s degree program in engineering disciplines. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

Degree Requirements

To earn an Associate in Mechanical/Civil/Aeronautical/Industrial/Materials Science Engineering-AS-T Other Engineer/MRP degree, you must complete a **minimum of 90 credits in transferable courses** with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Comp I

**Quantitative/Symbolic Reasoning Skills:** 25 credits – MATH& 151* Calculus I, MATH& 152* Calculus II, MATH& 153* Calculus III, MATH 220 Linear Algebra AND MATH 240 Differential Equations.

**Humanities/Social Science:** 15 credits – minimum 5 credits in Humanities, minimum 5 credits in Social Science, plus an additional 5 credits in either Humanities or Social Science from the **distribution list for transfer degrees.** Economics recommended.

**Diversity:** 5 credits – from the **Diversity course list.**

Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

**Pre-Major Requirements:** 40 credits

*It is recommended that sequence courses be completed at one institution

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM&amp; 161*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 214</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 215</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 225</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 221*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 223*</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:** 5 credits minimum – select electives appropriate for your intended major and intended baccalaureate institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>ENGL&amp; 235</td>
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<td>ENGR 106</td>
<td>5</td>
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<tr>
<td>ENGR&amp; 121*</td>
<td>1-3</td>
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<tr>
<td>ENGR&amp; 122*</td>
<td>1-3</td>
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<tr>
<td>ENGR&amp; 123*</td>
<td>1-3</td>
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<tr>
<td>ENGR&amp; 204</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 224</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 254*(was MATH 154)</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Demonstrate the ability to use foundational knowledge in mathematics, physics, chemistry, and biology.
- Design and conduct experiments.
- Make measurements, analyze data, and interpret results.
- Problem solving, team, self-assessment and lifelong learning skills.
- Communicate effectively.
AS-T in MET/MRP
ASSOCIATE IN MECHANICAL ENGINEERING TECHNOLOGY

Academic Plan

Complete basic background studies for transfer to a bachelor’s degree program in engineering technology disciplines. Careers may be found in research, development, design, operations management, teaching, sales and consulting.

Degree Requirements

To earn an Associate in Mechanical Engineering Technology-AS-T in MET/MRP degree, you must complete a minimum of 91 credits in transferable courses with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area. The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I.

Quantitative/Symbolic Reasoning Skills: 15 credits – MATH& 151* Calculus I, MATH& 152* Calculus II, AND MATH& 153* Calculus III OR MATH 210 Elements of Statistics

Humanities/Social Science: 15 credits – minimum 5 credits in Humanities AND minimum 5 credits in Social Science AND 5 additional credits in either Humanities or Social Science from the distribution list for transfer degrees.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

Pre-Major Requirements: 36 credits

It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM&amp; 161*</td>
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</tr>
<tr>
<td>CS 170</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 235</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 121*</td>
<td>3</td>
</tr>
<tr>
<td>ENGR&amp; 122*</td>
<td>3</td>
</tr>
<tr>
<td>PHYS&amp; 114*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 115*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 116*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 221*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td>5</td>
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<tr>
<td>PHYS&amp; 223*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 221, 222, 223 preferred</td>
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</tr>
</tbody>
</table>

Electives: 20 credits minimum. Choose as appropriate for intended major and intended baccalaureate institution:

<table>
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</thead>
<tbody>
<tr>
<td>ECON&amp; 201</td>
<td>5</td>
</tr>
<tr>
<td>ECON&amp; 202</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 123*</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 214</td>
<td>5</td>
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<tr>
<td>ENGR&amp; 215</td>
<td>5</td>
</tr>
<tr>
<td>ENGR&amp; 225</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 91

Diversity classes and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Apply knowledge of informatics, mathematics, science, and engineering.
- Design and conduct experiments and numerical simulations, analyze, and interpret general scientific and engineering information.
- Design a system, component, or process to meet desired needs.
- Communicate effectively.
- Understand the impact of engineering solutions in a social context.

Revised July 19, 2012
Courses in composition, creative writing and literature teach essential skills for clear written communication and provide insight into past and present cultures across the world. Prepare for transfer to a bachelor’s degree program leading to possible careers in professional writing, journalism, teaching and related fields.

**Degree Requirements**

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

- **Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

- **Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

- **Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

- **Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

- **Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

  - Example: SOC& 101 – Introduction to Sociology:DIV.

- **Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 108</td>
<td>Introduction to Literature</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 140</td>
<td>Intro to Women Writers:DIV</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 231</td>
<td>Creative Writing</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 232</td>
<td>Creative Writing</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 233</td>
<td>Creative Writing</td>
<td>5</td>
</tr>
<tr>
<td>ENGL 245</td>
<td>Contemporary Literature:DIV</td>
<td>5</td>
</tr>
</tbody>
</table>

**Minimum transferable credits required to earn this degree: 90**

Students completing this program should acquire the following skills and abilities:

- Students will be able to write an academic essay supporting a central assertion with appropriate evidence drawn from their own research.
- Students will develop an individual voice through a writing and editing process that involves the conscious consideration of critical audience responses.
- Students in literature courses will demonstrate an understanding of the fundamental characteristics of literature, such as plot and setting.
- Students will analyze literature from a variety of perspectives.
- Students of foreign language will be able to communicate in writing and in speech in the target language, and will demonstrate an awareness of the interaction between English-speaking culture and the cultures of the target language.
Associate in Sciences – Transfer

ENVIRONMENTAL SCIENCE Academic Plan

Today’s environmental problems call for people who are educated in more than one discipline, highly trained in scientific and technical skills, and aware of the ecological, political, economic, and social dimensions of environmental decisions. The Associate in Science-Transfer (AS-T) degree in Environmental Science provides a foundation in basic physical, biological, and social sciences, and also addresses the human element in environmental issues. This curriculum prepares students to transfer and complete a BS or BA in an Environmental Science field for subsequent graduate study in MS, PhD, and law degree programs and careers in government agencies or the private sector.

Degree Requirements

To earn an Associate in Sciences - Transfer degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications**: 5 credits - ENGL& 101 English Composition I.
- **Quantitative/Symbolic Reasoning Skills**: 10 credits – MATH& 151* Calculus I AND MATH& 152* Calculus II.
- **Humanities and Social Sciences**: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.
- **Diversity**: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Example: ENVS 150 – Environment and Society:DIV.

Pre-Major Requirements: 45 credits

* It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 211*</td>
<td>Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 212*</td>
<td>Majors Biology Animal</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 213*</td>
<td>Majors Biology Plant</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 161*</td>
<td>General Chemistry w/ Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 162*</td>
<td>General Chemistry w/ Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 163*</td>
<td>General Chemistry w/ Lab III</td>
<td>5</td>
</tr>
<tr>
<td>ENVS 150</td>
<td>Environment and Society</td>
<td>5</td>
</tr>
<tr>
<td>ENVS 215</td>
<td>Environmental Issues</td>
<td>5</td>
</tr>
<tr>
<td>MATH 153*</td>
<td>Calculus III OR MATH 210</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Elements of Statistics</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives**: 15 credits - These remaining credits must include program advisor approved credits. Recommended electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 130</td>
<td>Biodiversity of the Pacific Northwest</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 260</td>
<td>Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 105</td>
<td>Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOL 118</td>
<td>Historical Geology</td>
<td>5</td>
</tr>
<tr>
<td>GEOL 208</td>
<td>Geology of Pacific Northwest</td>
<td>5</td>
</tr>
<tr>
<td>OCEA 101</td>
<td>Intro to Oceanography</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Familiarity with the (empirical) scientific method of problem solving.
- Perform competitively with peers at four-year institutions or professional programs.
- Express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Ability to apply various techniques and processes using information, data, and situation, to draw logical, rational and ethical and coherent conclusions.
- Competent with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills in practical and abstract contexts.
Associate in Applied Science

FIRE SCIENCE TECHNOLOGY

Prepare for occupations and advancement in modern fire service with LCC’s Fire Science Technology program. The program includes fire suppression, fire investigation, fire prevention, emergency medical and rescue services, and hazardous materials emergency response. The program correlates classroom, laboratory, and clinical field experience in public and private fire organizations.

Degree Requirements

To earn an Associate in Applied Science – Fire Science degree, you must complete a minimum of 92-93 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 5 credits - ENGL 101 English Composition I OR ENGL 110 Industrial Communication.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II or higher OR MATH 106 Industrial Mathematics.

Human Relations/Social Science/Diversity: 5 credits – BUS 144 Management of Human Relations:DIV.

Health: 3 credits – HLTH 100 Occupational Safety and Health.

Natural Science: 5 credits – CHEM 100 Preparatory Chemistry OR PHYS 100 Physics:Non-Science Majors.

Electives*: 8 - 9 credits – choose from:

- FISC 170 Emergency Medical Technician I 8
- FISC 129 Emergency Incident Management 3 AND
- FISC 220 Wildland Fire Fighter II 3 AND
- FISC 224 Fire Service Instructor I 3

*Elective credits may be waived for EMT training. See advisor.

Program Requirements:

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 101</td>
<td>Introduction to Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FISC 105</td>
<td>Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FISC 109</td>
<td>Fire Service Safety</td>
<td>3</td>
</tr>
<tr>
<td>FISC 110</td>
<td>Fire Science I</td>
<td>3</td>
</tr>
<tr>
<td>FISC 111</td>
<td>Basic Fire Fighting Skills</td>
<td>10</td>
</tr>
<tr>
<td>FISC 125</td>
<td>Fire Service Rescue</td>
<td>5</td>
</tr>
<tr>
<td>FISC 205</td>
<td>Fire Invgn/Cause Determination</td>
<td>3</td>
</tr>
<tr>
<td>FISC 206</td>
<td>Hazardous Materials</td>
<td>3</td>
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<tr>
<td>FISC 207</td>
<td>Fire App. &amp; Pumping Equipment</td>
<td>4</td>
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<tr>
<td>FISC 210</td>
<td>Building Constr for Fire Protection</td>
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<tr>
<td>FISC 215</td>
<td>Fixed Systems &amp; Extinguishers</td>
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<tr>
<td>FISC 255</td>
<td>Fire Fighting Tactics and Strategy</td>
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<td>FISC 288</td>
<td>Cooperative Education</td>
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<td>FISC 289</td>
<td>Coop Education Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Total credits required to earn this degree: 92-93

Students completing this program should acquire the following skills and abilities:

- Demonstrate and appropriately use fire service equipment and procedures in conjunction with a variety of emergency response incidents.
- Identify fire and life safety hazards and make appropriate recommendations.
- Perform basic fire safety inspections and make appropriate recommendations to abate hazards.
- Conduct first responder fire cause and origin investigations.
- Conduct fire safety education presentations.
- Demonstrate knowledge of fire service organizations, functions and operations.
Certificate of Completion

FIRE INSPECTOR

The Fire Inspector Certificate of Completion program is designed to prepare students for occupations and advancement in modern fire service, including fire prevention, fire code enforcement, engine company fire inspections and other programs. The program correlates classroom, laboratory, and clinical field experience in public and private fire organization.

Certificate Requirements

To earn a Fire Science-Fire Inspector Certificate of Completion, you must complete a minimum of 18 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 105</td>
<td>Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FISC 110</td>
<td>Fire Science I</td>
<td>3</td>
</tr>
<tr>
<td>FISC 206</td>
<td>Hazardous Materials</td>
<td>3</td>
</tr>
<tr>
<td>FISC 210</td>
<td>Bldg. Construction/Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FISC 215</td>
<td>Fixed Systems &amp; Extinguishers</td>
<td>3</td>
</tr>
<tr>
<td>FISC 288/289</td>
<td>Cooperative Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 18

Students completing this program should acquire the following skills and abilities:

- Demonstrate the ability to conduct fire and life safety inspections using a check list inspection form listing common fire safety hazards.
- Demonstrate knowledge of the code enforcement process used by fire service organizations.
- Demonstrate the ability to locate fire safety regulations in the Fire Code.
The Fire Investigator Certificate of Completion program is designed to prepare students for occupations and advancement in modern fire service, including initial fire investigation for first responders, and other programs. The program correlates classroom, laboratory, and clinical field experience in public and private fire organization.

Certificate Requirements

To earn a Fire Science-Fire Investigator Certificate of Completion, you must complete a minimum of 15 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 110</td>
<td>Fire Science I</td>
<td>3</td>
</tr>
<tr>
<td>FISC 205</td>
<td>Fire Invest. &amp; Cause Determination</td>
<td>3</td>
</tr>
<tr>
<td>FISC 206</td>
<td>Hazardous Materials</td>
<td>3</td>
</tr>
<tr>
<td>FISC 210</td>
<td>Bldg. Construction/Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FISC 288/289</td>
<td>Cooperative Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 15**

Students completing this program should acquire the following skills and abilities:

- Demonstrate knowledge of basic fire cause investigation techniques.
- Demonstrate knowledge of criminal laws pertaining to fire investigation.
- Demonstrate knowledge of fire behavior as it relates to determining the origin, cause and circumstance of fires.
Certificate of Proficiency

FIRE PREVENTION SPECIALIST

Prepare for occupations and advancement in modern fire service with LCC’s Fire Science Technology program. The program includes fire suppression, fire investigation, fire prevention, emergency medical and rescue services, and hazardous materials emergency response. The program correlates classroom, laboratory, and clinical field experience in public and private fire organizations.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn an Fire Science – Fire Prevention Specialist Certificate of Proficiency, you must complete a minimum of 50 credits. The credits must include the following:

Communications: 10 credits - ENGL& 101 English Composition I AND SPCH 110 Intro to Public Speaking.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II or higher OR MATH 106 Industrial Mathematics.

Human Relations/ Social Science: 5 credits - BUS 144 Management of Human Relations

Program Requirements: 30 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 101</td>
<td>Introduction to Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FISC 105</td>
<td>Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FISC 110</td>
<td>Fire Science I</td>
<td>3</td>
</tr>
<tr>
<td>FISC 205</td>
<td>Fire Invgtn/Cause Determination</td>
<td>3</td>
</tr>
<tr>
<td>FISC 206</td>
<td>Hazardous Materials</td>
<td>3</td>
</tr>
<tr>
<td>FISC 210</td>
<td>Building Constr for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FISC 215</td>
<td>Fixed Systems &amp; Extinguishers</td>
<td>3</td>
</tr>
<tr>
<td>FISC 288</td>
<td>Cooperative Education</td>
<td>8</td>
</tr>
<tr>
<td>FISC 289</td>
<td>Coop Education Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 50

Students completing this program should acquire the following skills and abilities:

- Demonstrate knowledge of general fire prevention organization and functions.
- Demonstrate knowledge of basic fire origin and cause investigation.
- Demonstrate knowledge of fire and life safety code enforcement procedures.
- Demonstrate knowledge and ability to plan, and conduct fire and life safety presentations.
Certificate of Completion
PUBLIC EDUCATION SPECIALIST

The Fire Science Public Education Specialist Certificate of Completion program is designed to prepare students for occupations and advancement in modern fire service, including public fire safety education specialist, public information officer and other programs. The program correlates classroom, laboratory, and clinical field experience in public and private fire organization.

Certificate Requirements

To earn a Fire Science-Public Education Specialist Certificate of Completion, you must complete a **minimum of 17 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 101</td>
<td>Intro to Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FISC 105</td>
<td>Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FISC 110</td>
<td>Fire Science I</td>
<td>3</td>
</tr>
<tr>
<td>FISC 288/289</td>
<td>Cooperative Education</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Intro to Public Speaking</td>
<td>5</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: **17**

**Students completing this program should acquire the following skills and abilities:**

- Demonstrate general knowledge regarding fire service organization and functions.
- Demonstrate general knowledge of public fire and life safety issues.
- Demonstrate ability to plan, prepare and conduct fire and life safety presentations.
# Associate in Arts – Direct Transfer Agreement

## GEOGRAPHY Academic Plan

Knowledge about the planet we inhabit, the surrounding universe and the natural forces that impact our world adds value to our daily lives and provides the basis for interesting careers in a broad range of disciplines: astronomy, geology, meteorology and oceanography. Begin studies for an advanced degree leading to positions with government agencies or private industry as an independent consultant, teacher of researcher.

## Degree Requirements

To earn an Associate in Arts – Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I **AND** ENGL& 102 Composition II **AND** SPCH 110 Intro to Public Speaking **OR** SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

**Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title.

Example: ANTH& 206 – Cultural Anthropology:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

### Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH&amp; 206</td>
<td>Cultural Anthropology:DIV</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 130</td>
<td>Biodiversity of the Pacific NW</td>
<td>5</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 150</td>
<td>Environment and Society:DIV</td>
<td>5</td>
</tr>
<tr>
<td>GEOG 105</td>
<td>Physical Geography</td>
<td>5</td>
</tr>
<tr>
<td>GEOL&amp; 101</td>
<td>Intro Physical Geology</td>
<td>5</td>
</tr>
<tr>
<td>GEOL&amp; 208</td>
<td>Geology of the Pacific Northwest</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Elements of Statistics</td>
<td>5</td>
</tr>
<tr>
<td>OCEA&amp; 101</td>
<td>Introduction to Oceanography</td>
<td>5</td>
</tr>
<tr>
<td>SOC&amp; 101</td>
<td>Introduction to Sociology:DIV</td>
<td>5</td>
</tr>
<tr>
<td>SPAN&amp; 121</td>
<td>Spanish I:DIV</td>
<td>5</td>
</tr>
</tbody>
</table>

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Minimum transferable credits required to earn this degree:** 90

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### Students completing this program should acquire the following skills and abilities:

- Interpret and use various kinds of maps, globes, charts, and graphs.
- Apply scientific knowledge and techniques to current environmental issues.
- Describe basic earth processes in an interdisciplinary context.
- Effectively communicate geographical concepts.
- Demonstrate familiarity with global and regional geography and biogeography.
Associate in Arts – Direct Transfer Agreement

GEOLOGY Academic Plan

Knowledge about the planet we inhabit, the surrounding universe and the natural forces that impact our world adds value to our daily lives and provides the basis for interesting careers in a broad range of disciplines: astronomy, geology, meteorology and oceanography. Begin studies for an advanced degree leading to positions with government agencies or private industry as an independent consultant, teacher, or researcher.

Degree Requirements

To earn an Associate in Arts – Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/Symbolic Reasoning Skills: 5 credits - MATH& 107 or higher (excluding MATH& 131)

Humanities: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed. Drawing or photography is highly recommended.

Social Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

Natural Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

Diversity: 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title.

Example: SPAN& 121 – Intro to Spanish I:DIV.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses

It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR&amp; 101</td>
<td>Introduction to Astronomy</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 130</td>
<td>Biodiversity of Pacific Northwest</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 161*</td>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td>General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>ERSI 104</td>
<td>Introduction to Earth Sciences</td>
<td>5</td>
</tr>
<tr>
<td>GEOL&amp; 101</td>
<td>Intro Physical Geology</td>
<td>5</td>
</tr>
<tr>
<td>OCEA&amp; 101</td>
<td>Introduction to Oceanography</td>
<td>5</td>
</tr>
</tbody>
</table>

MATH& 141 and 142 are highly recommended.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Interpret and use various kinds of maps, globes, charts, and graphs.
- Apply scientific knowledge and techniques to current environmental issues.
- Describe basic earth processes in an interdisciplinary context.

- Effectively communicate earth sciences concepts.
- Demonstrate familiarity with global and regional geology and geography.
Associate in Sciences – Transfer
GEOLOGY Academic Plan

Knowledge about the planet we inhabit, the surrounding universe and the natural forces that impact our world adds value to our daily lives and provides the basis for interesting careers in a broad range of disciplines: astronomy, geology, meteorology and oceanography. Begin studies for an advanced degree leading to positions with government agencies or private industry as an independent consultant, teacher, or researcher.

Degree Requirements

To earn an Associate in Sciences – Transfer degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications:** 5 credits - ENGL 101 English Composition I.
- **Quantitative/Symbolic Reasoning Skills:** 10 credits – MATH& 151* Calculus I AND MATH& 152* Calculus II
- **Humanities and Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.

- **Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SPAN& 121 – Intro to Spanish I:DIV.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Pre-Major Requirements: 40 credits

*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM&amp; 161*</td>
<td></td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td></td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td></td>
</tr>
<tr>
<td>GEOL 118</td>
<td></td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td></td>
</tr>
<tr>
<td>MATH 210</td>
<td></td>
</tr>
<tr>
<td>PHYS&amp; 221*</td>
<td></td>
</tr>
<tr>
<td>PHYS&amp; 222*</td>
<td></td>
</tr>
<tr>
<td>PHYS&amp; 223*</td>
<td></td>
</tr>
<tr>
<td>MATH 112 through MATH 150</td>
<td>are highly recommended.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 153* Calcu. III OR Statistics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 221* Engr Physics I w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 222* Engr Physics II w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 223* Engr Physics III w/Lab</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:** 20 credits minimum - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERSI 104</td>
<td></td>
</tr>
<tr>
<td>GEOL&amp; 208</td>
<td></td>
</tr>
<tr>
<td>OCEA&amp; 101</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Earth Sciences</td>
<td>5</td>
</tr>
<tr>
<td>Geology of Pacific NW</td>
<td>5</td>
</tr>
<tr>
<td>Introduction to Oceanography</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

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**Students completing this program should acquire the following skills and abilities:**

- Interpret and use various kinds of maps, globes, charts, and graphs.
- Apply scientific knowledge and techniques to current environmental issues.
- Describe basic earth processes in an interdisciplinary context.
- Effectively communicate earth sciences concepts.
- Demonstrate familiarity with global and regional geology and geography.
Associate in Arts – Direct Transfer Agreement

HEALTH AND FITNESS Academic Plan

Prepare for careers in fitness, coaching, health promotion, exercise science and athletic training. After earning a bachelor’s degree, graduates can work in community services, leisure activities, therapeutic recreation, program supervision and commercial recreation.

Degree Requirements

To earn an Associate in Arts - Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II, AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/Symbolic Reasoning Skills: 5 credits of MATH& 107 or higher.

Humanities¹: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level.

Social Sciences¹: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees.

Natural Sciences¹: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological, and/or earth sciences. No more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

*It is strongly recommended that students take BIOL& 160, BIOL& 241 and BIOL& 242 as these are required courses for most 4-year programs in this content area.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List. No more than 3 PE activity courses may be taken as electives. PE activity courses are marked with an *.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH 105</td>
<td>1</td>
</tr>
<tr>
<td>HLTH 106</td>
<td>2</td>
</tr>
<tr>
<td>HLTH 110</td>
<td>2</td>
</tr>
<tr>
<td>NUTR&amp; 101</td>
<td>5</td>
</tr>
<tr>
<td>*PHED 104/204</td>
<td>1-2</td>
</tr>
<tr>
<td>*PHED 105/205</td>
<td>1-2</td>
</tr>
<tr>
<td>*PHED 110/210</td>
<td>2-4</td>
</tr>
<tr>
<td>*PHED 120/220</td>
<td>2-4</td>
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<tr>
<td>*PHED 125</td>
<td>1</td>
</tr>
<tr>
<td>*PHED 127/227</td>
<td>1-2</td>
</tr>
<tr>
<td>*PHED 128/228</td>
<td>2-4</td>
</tr>
<tr>
<td>*PHED 130/230</td>
<td>1-2</td>
</tr>
<tr>
<td>*PHED 139</td>
<td>1</td>
</tr>
<tr>
<td>*PHED 152/252</td>
<td>2</td>
</tr>
<tr>
<td>PHED 171</td>
<td>3</td>
</tr>
<tr>
<td>PHED 284</td>
<td>3</td>
</tr>
</tbody>
</table>

Students completing this program should acquire the following skills and abilities:

- Students will understand the basics of nutrition and the impact of nutrition on overall health.
- Students will understand the beneficial effects of health and fitness in their personal lives as well as all other aspects of life.

Students will have a basic understanding of exercise physiology and how various exercises and training routines contribute to strength, endurance, and overall physical health.

Students will demonstrate proficiency in developing health and fitness goals as well as health and fitness programs catering to individual needs both for themselves and others.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

lowercolumbia.edu 360.442.2311 toll-free 1.866.900.2311
HISTORY Academic Plan

The study of history provides an opportunity to explain the development of human societies over time through examination of the records (cultural, economic, political and scientific) of past generations. Transfer studies leading to a bachelor’s degree prepares you for government service, legal fields, education and other research careers.

Degree Requirements

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I **AND** ENGL& 102 Composition II **AND** SPCH 110 Intro to Public Speaking **OR** SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

**Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed. 5 credits of a foreign language recommended.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. ECON, HIST, POLS and SOC are recommended courses.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological, and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Example: HIST& 215 – Women in U.S. History:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST&amp; 126</td>
<td></td>
</tr>
<tr>
<td>HIST&amp; 127</td>
<td></td>
</tr>
<tr>
<td>HIST&amp; 128</td>
<td></td>
</tr>
<tr>
<td>HIST&amp; 136</td>
<td></td>
</tr>
<tr>
<td>HIST&amp; 137</td>
<td></td>
</tr>
<tr>
<td>HIST&amp; 215</td>
<td></td>
</tr>
<tr>
<td>HIST 254</td>
<td></td>
</tr>
</tbody>
</table>

**Diversity classes and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.**

**Minimum transferable credits required to earn this degree: 90**

Students completing this program should acquire the following skills and abilities:

- Comprehend and chronologically organize important geographical features, ideas, developments, events, people and institutions.
- Distinguish between and analyze primary and secondary sources, and historical facts and interpretations.
- Identify and describe cause and effect relationships for major historical events, and describe and explain changes over time.
- Empathetically understand differing perspectives of peoples of the past, and be able to compare and contrast among different sources, different ideas, and different explanations.
- Write coherently and accurately about the past.
- Discuss how the past continues to shape students and their contemporary world.
Associate in Applied Science

HOMELAND SECURITY EMERGENCY MANAGEMENT

Designed to prepare the next generation of emergency management and policy leaders with the knowledge and skills needed to improve outcomes in disasters of all types. The 98 credit online degree program includes instruction in policy as well as planning and operational components of emergency management and homeland security, including opportunities to gain practical experience and work with current incident management technologies. The curriculum provides policy foundations and advances students through core competencies in hazard identification; risk and vulnerability assessment; planning; terrorism; mitigation, preparedness, response and recovery; and planning for diverse populations. The Associate in Technology Homeland security Emergency Management (HSEM) degree will prepare students with the competencies to work in an all-hazards preparedness environment, including an understanding of socioeconomic and cultural diversity issues.

Degree Requirements

To earn an Associate in Applied Science – Homeland Security Emergency Management degree, you must complete a **minimum of 98 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**NOTE:** Some courses have prerequisites, check catalog description.

**GENERAL EDUCATION REQUIREMENTS (40 CREDITS)**

**Communications:** 10 credits
ENGL& 101 English Composition I  5
ENGL& 235 Technical Writing  5

**Quantitative/ Symbolic Reasoning Skills:** 5 credits
MATH 210 Elements of statistics  5

**Social Sciences:** 10 credits – Select two:
POLS& 101 Intro to Political Science  5
POLS& 202 American Government  5
POLS& 203 International Relations  5
PSYC& 100 General Psychology  5
HIST 136 U.S. History I  5

**Humanities:** 5 credits – Select one:
SPCH 109 Intercultural Communications  5
SPCH 114 Small Group Communication  5

**Natural Science:** 10 credits – select two:
ERSI 104 Introduction to Earth Sciences  5
ERSI 105 Earth Systems  5
ENVS 215 Environmental Issues  5
GEOG& 101 Physical Geography  5
GEOL& 208 Geology of the Pacific NW  5

**HSEM CORE REQUIREMENTS (43 CREDITS)**
HSEM 102* Intro to Emergency Management  5
HSEM 110* Basic ICS/NIMS  2
HSEM 120* All Hazards Emergency Planning  3
HSEM 130* Technology in Emergency Mgmnt  3
HSEM 157* Public Information Officer  2
HSEM 160* Emergency Response Awareness to Terrorism  5
HSEM 180* Public Administration  3
HSEM 190-X Special Topics in HSEM  (X=A, B, C or D)  3
HSEM 200 Emergency Operations Center  2
HSEM 210 Exercise Design and Evaluation  3
HSEM 220 Developing/Managing Volunteer  2
HSEM 230 Disaster Response & Recovery  2
HSEM 240 HSEM Work-Based Learning  5
HSEM 250 Homeland Security Law/Ethics  3

**HSEM ELECTIVES (15 CREDITS)**
BUS 119 Business Communication  5
BTEC 145 Microsoft Word  1-5
CS 121 Microsoft Excel  5
BTEC 146 PowerPoint  1-2
CJ 100 Business Law Enforcement  5
CJ & 101 Introduction to Criminal Justice  5
CJ 154 The American Legal System  5
CJ 181 Report Writing f/Law Enforcement  5
CJ 183 Administration of Justice  5
CJ 185 Community Policing  5
CJ 187 Crisis Intervention Prof  5
ENGL& 102 Composition II  5
HSEM 144 Management of Human Relations  3
BUS 240 Principles of Supervision  5
BUS 245 Principles of Management  5
HSEM 190 Mental Health  3
MFG 105 Industrial Safety  3
CS 250 Digital Forensics and the Law  5
CS 251 Digital Forensics Incident  5
CS 252 Collect-Exam Digital Evidence  5

**Total credits required to earn this degree:** 98

*Indicates HSEM Certificate (26 credits)

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Revised May 2014
Certificate of Completion

HOMELAND SECURITY EMERGENCY MANAGEMENT

Students explore the complex world of emergency and disaster management issues and learn the critical thinking and decision-making skills necessary to support and supervise comprehensive, integrated and effective management in the event of natural, system-wide or human-induced crisis.

The Homeland Security Emergency Management certificate is offered at Pierce College through online course work. The certificate is designed to prepare the next generation of emergency management and policy leaders with the knowledge and skills they need to improve outcomes in disasters of all types. The program addresses competencies required of emergency management professionals in careers in federal, state or local government.

Certificate Requirements

To earn a Homeland Security Emergency Management Certificate of Completion, you must complete a minimum of 26 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSEM 102</td>
<td>Intro to Homeland Security Emergency Management</td>
<td>5</td>
</tr>
<tr>
<td>HSEM 110</td>
<td>Basic ICS/NIMS</td>
<td>2</td>
</tr>
<tr>
<td>HSEM 120</td>
<td>All Hazards Emergency Planning</td>
<td>3</td>
</tr>
<tr>
<td>HSEM 130</td>
<td>Technology in Emergency Mgmnt</td>
<td>3</td>
</tr>
<tr>
<td>HSEM 157</td>
<td>Public Information Officer</td>
<td>2</td>
</tr>
<tr>
<td>HSEM 160</td>
<td>Emergency Response Awareness to Terrorism</td>
<td>5</td>
</tr>
<tr>
<td>HSEM 180</td>
<td>Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>HSEM 190-X</td>
<td>Special Topics in HSEM (X=A,B,C or D)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 26

Students completing this program should acquire the following skills and abilities:

- Apply effective interpersonal communication, critical thinking and decision-making skills commensurate with a defined level of responsibility.
- Develop agency/organization specific tools to evaluate specific domestic security challenges for the 21st century that face the United States and other industrialized nations.
- Design and modify plans and programs at federal, state, and/or local levels to reflect the evolving strategic policy issues associated with a statutory and presidential direction for homeland security.
- Recognize how to access and disseminate information through multiple agencies in order to forecast the risks, types, and orders of magnitude of terrorist threats most likely to confront the nation/state.
- Define the interdisciplinary nature of Homeland Security/Emergency Management functions and be able to assess and integrate various functional areas.
- Apply a solid foundation of knowledge and skills to assume leadership roles in emergency management, homeland security, and/or public policy.
Certificate of Proficiency

INDIVIDUALIZED CERTIFICATE PROGRAM

The Individualized Certificate Program (ICP) offers an opportunity to pursue a custom-designed worksite-based learning program that is not available through current apprenticeship or college programs. Work closely with the ICP advisor, 360.442.2332, to ensure courses meet program requirements.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn an Individualized Certificate Program Certificate of Proficiency, you must complete a minimum of 45 credits. Remedial courses (numbered under 100) except for Math, do not count towards the 45 credits needed for the certificate.

A site needs to be developed for each individualized program. You will be interviewed and selected by an employer. The location and your selection of a work site will have an impact on how long it takes to complete your certificate. Your work-based learning experience depends upon the available sites.

College level courses are transferable into the ICP or if you decide to pursue further education, the credits you have earned may be applied toward a degree program.

Additional classes depend upon the occupation in which you are training. The ICP Program Manager will assist you in developing a tentative schedule.

Each program has specific requirements; examples are:

Communications: 5 credits - ENGL 100 College-Ready English II OR ENGL& 101 English Composition I.

Quantitative Skills: 5 credits - Dependent on the certificate: MATH 078/079 Pre-College Math I OR MATH 088/089 Pre-College Math II or higher OR MATH 105 Math for Health Sciences.

Human Relations/ Social Science: 5 credits - BUS 144 Management of Human Relations OR BUS 150 Customer Service/Management (recommended).

Additional Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLTH 100</td>
<td>Occupational Safety &amp; Health</td>
<td>3</td>
</tr>
<tr>
<td>ICP 288</td>
<td>Cooperative Work Experience</td>
<td>3 - 17</td>
</tr>
<tr>
<td>ICP 289</td>
<td>Employment Portfolio</td>
<td>1</td>
</tr>
<tr>
<td>ICP 291</td>
<td>ICP Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

Program Requirements:

See ICP advisor for a list of required program courses.

Students completing this program should acquire the following skills and abilities:

- Demonstrate appropriate professional spoken and written communication
- Apply principles of human relations in a professional setting
- Perform tasks expected of entry-level employees in the chosen field
- Identify behaviors necessary for employment success
Associate in Applied Science
ADVANCED MANUFACTURING TECHNOLOGY

Manufacturing industries are in need of skilled production operators and technicians with up-to-date, 21st century skills. Industries that make products from metal, plastics, wood and other materials, as well as those producing solar panels, biofuels, energy, petrochemicals, pharmaceuticals, food, semiconductors, and a host of other traditional and “green” products need employees capable of running and servicing sophisticated machinery. In addition, workers in these industries must understand and practice principles aimed at maintaining safety, improving quality, eliminating waste, and reducing or eliminating the impact of operations on the environment.

Degree Requirements
To earn an Associate in Applied Science – Advanced Manufacturing Technology degree, you must complete a minimum of 95 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 5 credits – ENGL 099 (was ENGL 100) College Ready English II OR ENGL& 101 English Composition I OR ENGL 110 Industrial Communications. (ENGL 110 recommended)

Health: 3 credits – HLTH 100 Occupational Safety & Health.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II or higher (MATH 106 recommended)

Human Relations/Social Science: 5 credits – BUS 144 Management of Human Relations:DIV. BUS 144 also meets the Diversity requirement.

Natural Sciences: 5 credits – from the distribution list for Professional/Technical degrees. MFG 130 Materials Science is recommended.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: BUS 144 Management of Human Relations:DIV.

Program Requirements:
- BLPT 150 Machinists Blueprint Reading OR BLPT 160 Blueprint Reading for Welders
- CS 110 Intro to Microcomputer Apps
- MASP 107 Machining for Related Occupations and/or MASP 111 Machine Shop
- MFG 115 Manufacturing Processes
- MFG 120 Quality Assurance
- MFG 140 Industrial Hydraulics
- MFG 230 Computer Integrated Manf
- PMFG 110 Industrial Maint Fundamentals
- PMFG 150 Elec/Electronic Fundamentals
- PMFG 151 Process Control Equipment
- PMFG 152 Process Control Systems
- PMFG 201 Electrical Control Equipment
- PMFG 202 Electric Motors
- PMFG 210 Adv Industrial Maintenance
- WELD 105 Related Welding I

Total credits required to earn this degree: 95

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Work safely in a manufacturing environment.
- Describe a variety of common manufacturing techniques and components in manufacturing systems.
- Perform basic machining and welding techniques.
- Read basic blueprints, diagrams, and schematics associated with various manufacturing processes.
- Describe basic concepts related to mechanical, hydraulic/pneumatic, and electrical systems.

- Describe basic process control strategies.
- Participate effectively as a part of a work team.
- Describe various approaches used to ensure quality in manufacturing operations.
- Perform basic maintenance tasks on common in manufacturing operations.
Certificate of Completion
DIGITAL FORENSICS

Targets the needs of business, organizations, and law enforcement in handling the increasing issues related to digital activities contrary to policy, ethics, and law.

This certificate is part of the Information Technology AAS degree. Many of the courses listed have prerequisite course requirements. Students intending to complete as a stand-alone certificate should have prior coursework or experience in the Information Technology field. See advisor for information or course catalog for list of prerequisites for each course.

Certificate Requirements

To earn a Digital Forensics Certificate of Completion, you must complete a **minimum of 18 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 250</td>
<td>Digital Forensics and the Law</td>
<td>4</td>
</tr>
<tr>
<td>CS 251</td>
<td>Digital Forensics Incidence Response</td>
<td>5</td>
</tr>
<tr>
<td>CS 252</td>
<td>Collection &amp; Examination of Digital Evidence</td>
<td>5</td>
</tr>
<tr>
<td>CS 253</td>
<td>Digital Forensics for Live and Mobile Systems</td>
<td>4</td>
</tr>
</tbody>
</table>

Some courses have prerequisites; see catalog descriptions and CS advisor.

*Total credits required to earn this certificate: 18*

**Students completing this program should acquire the following skills and abilities:**

- Apply digital legal requirements related to evidence handling an investigation.
- Demonstrate proper handling of possible evidence related to investigations following identified digital forensic procedure in theory and practice.
- Demonstrate skills in acquisition, recovery, analysis, and documentation of digital data from digital devices and systems.
Certificate of Completion

FUNDAMENTALS OF MANUFACTURING

Manufacturing companies are looking for employees who understand basic manufacturing processes and can work safely and efficiently in a production environment. The Fundamentals of Manufacturing certificate provides the basic skills needed for many entry-level manufacturing jobs.

Certificate Requirements

To earn a Fundamentals of Manufacturing Certificate of Completion, you must complete a minimum of 24-28 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>HLTH 100 Occupational Safety and Health</td>
<td>OR</td>
</tr>
<tr>
<td>5</td>
<td>MFG 105 Industrial Safety</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MFG 115 Manufacturing Processes</td>
<td></td>
</tr>
</tbody>
</table>

16-20 credits from the following list:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>MATH 078/079 Pre-College Math I or higher</td>
</tr>
<tr>
<td>10</td>
<td>MASP 107 and/or MASP 111 Machine Shop</td>
</tr>
<tr>
<td>4</td>
<td>MFG 120 Quality Assurance</td>
</tr>
<tr>
<td>4</td>
<td>MFG 140 Industrial Hydraulics</td>
</tr>
<tr>
<td>3</td>
<td>MFG 205 Work Teams in Industry</td>
</tr>
<tr>
<td>5</td>
<td>PMFG 110 Industrial Maintenance</td>
</tr>
<tr>
<td>6</td>
<td>WELD 105 Related Welding I</td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 24 - 28

Students completing this program should acquire the following skills and abilities:

- Work safely in an industrial environment.
- Describe basic manufacturing processes.
- Use applied mathematics to solve shop problems.
- Depending on electives chosen, certificate recipients may possess the skills and abilities described below:
  - Set up and operate manual machine tools to manufacture parts per specification.
  - Perform basic welding techniques commonly used for incidental welding in industry.
  - Describe various quality control techniques.
  - Describe various industrial devices commonly used in manufacturing and the maintenance they require.
  - Read and interpret schematics for various hydraulic systems and perform basic system maintenance.
Certificate of Completion

HELP DESK TECHNICIAN

Provide problem resolution for software, hardware, and network issues for end users.

This certificate is part of the Information Technology AAS degree. Many of the courses listed have prerequisite course requirements. Students intending to complete as a stand-alone certificate should have prior course work or experience in the Information Technology field. See advisor for information or course catalog for list of prerequisites for each course.

Certificate Requirements

To earn a Help Desk Technician Certificate of Completion, you must complete a minimum of 12 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTEC 145</td>
<td>Intro to MS Word</td>
<td>5</td>
</tr>
<tr>
<td>BTEC 148</td>
<td>Intro to Outlook</td>
<td>2</td>
</tr>
<tr>
<td>BUS 150</td>
<td>Customer Service/Management</td>
<td>5</td>
</tr>
</tbody>
</table>

Some courses have prerequisites; see catalog descriptions and CS advisor.

Total credits required to earn this certificate: 12

Students completing this program should acquire the following skills and abilities:

- Complete basic skills in MS Word, Outlook, Excel, and Access to develop appropriate documents and provide user support.
- Practice interpersonal skill, interacting effectively with employees and customers, and establishing positive relationships in providing support.
Associate in Applied Science

INFORMATION TECHNOLOGY SYSTEMS

Qualify for entry-level employment as a computer support specialist, utilizing skills in networking, programming, and applications support by successfully completing program requirements and select areas of emphasis.

Degree Requirements

To earn an Associate in Applied Science – Information Technology Systems degree, you must complete a minimum of 92-100 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I

**Quantitative Skills:** 5 credits – MATH 098/099 Pre-College Math III OR higher (excluding MATH& 131/132)

**Human Relations/ Social Science/ Diversity:** 5 credits – BUS 144 Management of Human Relations:DIV OR SOC& 101 Intro to Sociology:DIV.

**Humanities/ Natural Sciences:** 5 credits - CS 170 Fundamentals of Computer Programming.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 100</td>
<td>Intro to Information Systems</td>
<td>5</td>
</tr>
<tr>
<td>CS 102</td>
<td>Intro to Internet Theory, App, and Web Page Design</td>
<td>5</td>
</tr>
<tr>
<td>CS 121</td>
<td>Introduction to Spreadsheets</td>
<td>5</td>
</tr>
<tr>
<td>CS 130</td>
<td>Introductory Database Apps</td>
<td>5</td>
</tr>
<tr>
<td>CS 141</td>
<td>PC Technician I</td>
<td>5</td>
</tr>
<tr>
<td>CS 142</td>
<td>PC Technician II</td>
<td>5</td>
</tr>
<tr>
<td>CS 143</td>
<td>Configuring Windows Operating System</td>
<td>5</td>
</tr>
<tr>
<td>CS 211</td>
<td>Networking Basics</td>
<td>5</td>
</tr>
<tr>
<td>CS 260</td>
<td>Intro to Network Security</td>
<td>5</td>
</tr>
<tr>
<td>CS 288/289</td>
<td>Cooperative Education</td>
<td>2</td>
</tr>
</tbody>
</table>

**Electives:** Complete any two Certificate requirements listed below. (25 credits minimum)

*Help Desk Technician* 5 credits
- BTEC 145 Intro to MS Word
- BTEC 148 Intro to Outlook
- BUS 150 Customer Service/Management

Total Credits 12

*Networking Certificate* 5 credits
- CS 212 Local Area Networks: Theory & Apps
- CS 213 Local Area Networks: Theory & Apps
- CS 249 Advanced Operating Systems

Total Credits 15

*Programming Certificate* 5 credits
- CS 175 Event-Driven Programming
- CS 270 Data Structures I
- CS 275 Object-Oriented Prog. in Java

Total Credits 15

*Web Development Certificate* 3 credits
- ART 162 Beginning Photoshop Design
- CS 175 Event-Driven Programming OR
- CS 275 Object-Oriented Prog. in Java
- CS 230 Database Development

Total Credits 13

*Digital Forensics* 4 credits
- CS 250 Digital Forensics and the Law
- CS 251 Digital forensics Incidence Response
- CS 252 Collection & Exam of Digital Evidence
- CS 253 Digital Forensics for Live & Mobile Systems

Total Credits 18

**NOTE:** Some courses have prerequisites, check catalog descriptions.

Total credits required to earn this degree: 92-100

Students completing this program should acquire the following skills and abilities:

- Design and implement web pages using xml and CSS.
- Design and implement programs using at least one of the following languages: C++, Java, and C#.
- Distinguish between various network topologies and types.
- Recognize the requirements for the Network+ Certification.
- Distinguish between various network connection technologies, such as hubs, routers, and switches.
- Review the various network protocols, such as TCP/IP, internet protocol addressing, including IPv4, and IPv6.
- Function as members of teams to implement projects.
- Examination preparation for the A+ hardware certification.
- Apply basic security concepts to computers in a Local Area Network.
- Design a network security plan and use a variety of network security tools.

Updated July 2014

lowercolumbia.edu  360.442.2311  toll-free 1.866.900.2311
Associate in Applied Science – Transfer
INFORMATION TECHNOLOGY SYSTEMS

qualify for entry-level employment as a computer support specialist, utilizing skills in networking, programming, and applications support by successfully completing program requirements and select areas of emphasis. This degree has some transferability to certain universities. Students should contact a university advisor to confirm details and acceptance.

Degree Requirements
To earn an Associate in Applied Science – Transfer - Information Technology Systems degree, you must complete a minimum of 92-100 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I
Quantitative Skills: 5 credits – MATH& 107 Math in Society OR higher (excluding MATH& 131/132)

Human Relations/ Social Science/ Diversity: 5 credits – BUS 144 Management of Human Relations: DIV OR SOC& 101 Intro to Sociology: DIV.

Humanities/ Natural Sciences: 5 credits - CS 170 Fundamentals of Computer Programming.

Program Requirements: credits
CS 100 Intro to Information Systems 5
CS 102 Intro to Internet Theory, App, and Web Page Design 5
CS 121 Introduction to Spreadsheets 5
CS 130 Introductory Database Apps 5
CS 141 PC Technician I 5
CS 142 PC Technician II 5
CS 143 Configuring Windows Operating Systems 5
CS 211 Networking Basics 5
CS 260 Intro to Network Security 5
CS 288/289 Cooperative Education 2

Electives: Complete any two Certificate requirements listed below. (25 credits minimum)

Help Desk Technician
BTEC 145 Intro to MS Word 5
BTEC 148 Intro to Outlook 2
BUS 150 Customer Service/Management 5
Total Credits 12

Networking Certificate
CS 212 Local Area Networks: Theory & Apps 5
CS 213 Local Area Networks: Theory & Apps 5
CS 249 Advanced Operating Systems 5
Total Credits 15

Programming Certificate
CS 175 Event-Driven Programming 5
CS 270 Data Structures I 5
CS 275 Object-Oriented Prog. in Java 5
Total Credits 15

Web Development Certificate
ART 162 Beginning Photoshop Design 3
CS 175 Event-Driven Programming OR 5
CS 275 Object-Oriented Prog. in Java 5
CS 230 Database Development 5
Total Credits 13

Digital Forensics
CS 250 Digital Forensics and the Law 4
CS 251 Digital forensics Incidence Response 5
CS 252 Collection & Exam of Digital Evidence 5
CS 253 Digital Forensics for Live & Mobile Systems 4
Total Credits 18

NOTE: Some courses have prerequisites, check catalog descriptions.

Total credits required to earn this degree: 92-100

Students completing this program should acquire the following skills and abilities:

• Design and implement web pages using xhtml and CSS.
• Design and implement programs using at least one of the following languages: C++, Java, and C#.
• Distinguish between the various network topologies and types.
• Recognize the requirements for the Network+ Certification.
• Distinguish between various network connection technologies, such as hubs, routers, and switches.
• Review the various network protocols, such as TCP/IP, internet protocol addressing, including IPv4, and IPv6.
• Examination preparation for the A+ hardware certification.
• Function as members of teams to implement projects.
• Apply basic security concepts to computers in a Local Area Network.
• Design a network security plan and use a variety of network security tools.
Associate in Applied Science - Transfer
INFORMATION TECHNOLOGY
SYSTEMS Pathway
for City University BS Computer Systems

Qualify for entry-level employment as a computer support specialist, utilizing skills in networking, programming, and applications support by successfully completing program requirements and select areas of emphasis. This degree has some transferability to certain universities. Students should contact a university advisor to confirm details and acceptance.

Degree Requirements

To earn an Associate in Applied Science - Transfer - Information Technology Systems degree, you must complete a **minimum of 95 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

**Communications:** 10 credits - ENGL& 101 English Composition I and ENGL& 102 English Composition II

**Quantitative Skills:** 5 credits – MATH 125 Finite Math

**Social Science:** 10 credits – BUS& 101 Introduction to Business AND an additional courses selected from the **distribution list for Professional/Technical degrees** for Social Science classes that meet this requirement.

**Humanities:** 5 credits - from the **distribution list for Professional/Technical degrees** for Humanities classes that meet this requirement.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Program Requirements:

<table>
<thead>
<tr>
<th>Program Requirements:</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 100 Intro to Information Systems</td>
<td>5</td>
</tr>
<tr>
<td>CS 102 Intro to Internet Theory, App, and Web Page Design</td>
<td>5</td>
</tr>
<tr>
<td>CS 121 Introduction to Spreadsheets</td>
<td>5</td>
</tr>
<tr>
<td>CS 130 Introductory Database Applications</td>
<td>5</td>
</tr>
<tr>
<td>CS 141 PC Technician I</td>
<td>5</td>
</tr>
<tr>
<td>CS 142 PC Technician II</td>
<td>5</td>
</tr>
<tr>
<td>CS 170 Fundamentals of Computer Programming</td>
<td>5</td>
</tr>
<tr>
<td>CS 208 Intro to Management Information Systems</td>
<td>5</td>
</tr>
<tr>
<td>CS 211 Networking Basics</td>
<td>5</td>
</tr>
<tr>
<td>CS 230 Database Development</td>
<td>5</td>
</tr>
<tr>
<td>CS 260 Intro to Network Security</td>
<td>5</td>
</tr>
<tr>
<td>CS 270 Data Structures I</td>
<td>5</td>
</tr>
<tr>
<td>CS 280 Advanced Data Structures</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:**

**NOTE:** Some courses have prerequisites, check catalog descriptions.

**Total credits required to earn this degree:** 95

Students completing this program should acquire the following skills and abilities:

- Design and implement web pages using xhtml and CSS.
- Design and implement programs using at least one of the following languages: C++, Java, and C#.
- Distinguish between the various network topologies and types.
- Recognize the requirements for the Network+ Certification.
- Design a network security plan and use a variety of network security tools.
- Review the various network protocols, such as TCP/IP, internet protocol addressing, including IPv4, and IPv6.
- Examination preparation for the A+ hardware certification.
- Function as members of teams to implement projects.
- Apply basic security concepts to computers in a Local Area Network.
Associate in Arts – Direct Transfer Agreement

PRE-LAW Academic Plan

Law careers can be built upon interests in accounting, corporate management, public administration, politics, criminal investigation, as well as legal practice. Most law schools do not require specific undergraduate programs, but recommend courses appropriate for the baccalaureate degree of the student’s choice. Pre-law students should have the ability to read, write, and speak English well, a critical understanding of human values and institutions, and the creative power to think.

Degree Requirements

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

Quantitative/Symbolic Reasoning Skills: 5 credits - MATH& 107 or higher (excluding MATH& 131)

Humanities: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

Social Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline. PSYC and SOC are recommended courses.

Natural Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Example: SOC& 101 – Intro to Sociology:DIV.

Electives: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS&amp; 201</td>
<td>Business Law 5</td>
</tr>
<tr>
<td>CJ 154</td>
<td>The American Legal System 5</td>
</tr>
<tr>
<td>CJ 286</td>
<td>Criminal Law Administration 5</td>
</tr>
<tr>
<td>POLS&amp; 101</td>
<td>Intro Political Science 5</td>
</tr>
<tr>
<td>POLS 220</td>
<td>The Law and Social Issues 5</td>
</tr>
<tr>
<td>PSYC 204</td>
<td>Applied Psychology 5</td>
</tr>
<tr>
<td>SOC&amp; 101</td>
<td>Introduction to Sociology:DIV 5</td>
</tr>
</tbody>
</table>

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- A basic understanding of the institutions that develop law.
- Ability to read for a clear understanding of content and relationships.
- Reason logically and think critically.
- Solve problems given specific factual situations.
- Write and speak with clarity, precision, and style.

Revised May 2014
Associate in Applied Science

MACHINE TRADES

Prepare for a job as a machinist, millwright, and tool and die maker, or another occupation related to manufacturing through LCC’s Machine Trades program. Graduates may work as advanced apprentice machinists, machine operators, or programmers.

Degree Requirements

To earn an Associate in Applied Science – Machine Trades degree, you must complete a minimum of 99 credits with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

Communications: 5 credits - ENGL& 110 Industrial Communications is recommended.

Health: 3 credits – HLTH 100 Occupational Safety & Health.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II or higher OR MATH 106 Industrial Mathematics (recommended).

Human Relations/ Social Science: 5 credits – BUS 144 Management of Human Relations is recommended.

Humanities /Natural Sciences: 5 credits – from the distribution list for Professional/Technical degrees. MFG 130 Materials Science is recommended.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: BUS 144 – Management of Human Relations:DIV.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 150</td>
<td>5</td>
</tr>
<tr>
<td>MASP 112</td>
<td>10</td>
</tr>
<tr>
<td>MASP 113</td>
<td>10</td>
</tr>
<tr>
<td>MASP 204</td>
<td>3</td>
</tr>
<tr>
<td>MASP 205</td>
<td>3</td>
</tr>
<tr>
<td>MASP 221</td>
<td>10</td>
</tr>
<tr>
<td>MASP 222</td>
<td>10</td>
</tr>
<tr>
<td>MASP 223</td>
<td>10</td>
</tr>
<tr>
<td>MASP 224</td>
<td>10</td>
</tr>
<tr>
<td>MASP 225</td>
<td>6</td>
</tr>
<tr>
<td>MFG 115</td>
<td>5</td>
</tr>
<tr>
<td>MFG 230</td>
<td>4</td>
</tr>
</tbody>
</table>

MASP 107 Machining for Related Occupations and/or MASP 111 Machine Shop I for a combined total of 10 credits.

Total credits required to earn this degree: 99

Students completing this program should acquire the following skills and abilities:

- Successfully work as an entry-level machinist.
- Ability to read and interpret industrial blueprints.
- Program and set up a computer numerical control (CNC) mill and CNC lathe in order to produce parts per specification.
- Set up and operate manual machine tools to manufacture parts per specification.
- Apply CAD/CAM software to design and manufacture precision machine parts.
- Use applied mathematics to solve shop problems.

Revised March 2012
Certificate of Proficiency

Computer Numerical Control (CNC)

The Machine Trades certificate program is another route to employment as a machinist, millwright, tool and die maker, or other occupation related to manufacturing. Graduates may work as advanced apprentice machinists, machine operators, or programmers.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Computer Numerical Control – Certificate of Proficiency, you must complete a **minimum of 68 credits**. The credits must include the following:

**Communications:** 5 credits - ENGL& 110 Industrial Communications is recommended.

**Health:** 3 credits – HLTH 100 Occupational Safety & Health.

**Quantitative Skills:** 5 credits – MATH 088/089 Pre-College Math II or higher (MATH 106 Industrial Mathematics recommended).

**Human Relations/ Social Science:** 5 credits – BUS 144 Management of Human Relations is recommended.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 150</td>
<td>Machinists Blueprint Reading</td>
<td>5</td>
</tr>
<tr>
<td>MASP 204</td>
<td>CNC Machining Center Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MASP 205</td>
<td>CNC Turning Center Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MASP 221</td>
<td>CNC Milling</td>
<td>10</td>
</tr>
<tr>
<td>MASP 222</td>
<td>CNC Turning</td>
<td>10</td>
</tr>
<tr>
<td>MFG 115</td>
<td>Manufacturing Processes</td>
<td>5</td>
</tr>
<tr>
<td>MFG 230</td>
<td>Computer Integrated Manufacturing</td>
<td>4</td>
</tr>
<tr>
<td>MASP 107</td>
<td>Machining for Related Occupations and/or</td>
<td></td>
</tr>
<tr>
<td>MASP 111</td>
<td>Machine Shop I for a combined total of 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>credits</td>
<td></td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: **68**

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Students completing this program should acquire the following skills and abilities:

- Successfully work as an entry-level machinist.
- Ability to read and interpret industrial blueprints.
- Program and set up a computer numerical control (CNC) mill and CNC lathe in order to produce parts per specification.
- Set up and operate manual machine tools to manufacture parts per specification.
- Apply CAD/CAM software to design and manufacture precision machine parts.
- Use applied mathematics to solve shop problems.
Certificate of Proficiency
MACHINIST

The Machine Trades certificate program is another route to employment as a machinist, millwright, tool and die maker, or other occupation related to manufacturing. Graduates may work as advanced apprentice machinists, machine operators, or programmers.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Machinist – Certificate of Proficiency, you must complete a **minimum of 74 credits**. The credits must include the following:

**Communications:** 5 credits - ENGL& 110 Industrial Communications is recommended.

**Health:** 3 credits - HLTH 100 Occupational Safety & Health.

**Quantitative Skills:** 5 credits – MATH 088/089 Pre-College Math II or higher (MATH 106 Industrial Mathematics recommended).

**Human Relations/ Social Science:** 5 credits – BUS 144 Management of Human Relations is recommended.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 150</td>
<td>Machinists Blueprint Reading</td>
<td>5</td>
</tr>
<tr>
<td>MASP 112</td>
<td>Machine Shop II</td>
<td>10</td>
</tr>
<tr>
<td>MASP 113</td>
<td>Machine Shop III</td>
<td>10</td>
</tr>
<tr>
<td>MASP 114</td>
<td>Machine Shop IV</td>
<td>10</td>
</tr>
<tr>
<td>MFG 115</td>
<td>Manufacturing Processes</td>
<td>5</td>
</tr>
<tr>
<td>WELD 152</td>
<td>Intro to Arc Welding</td>
<td>6</td>
</tr>
<tr>
<td>MASP 107</td>
<td>Machining for Related Occupations and/or MASP 111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machine Shop I for a combined total of 10 credits</td>
<td></td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate: 74**

**Students completing this program should acquire the following skills and abilities:**

- Successfully work as an entry-level machine operator.
- Ability to read and interpret industrial blueprints.
- Program and set up a computer numerical control (CNC) mill and CNC lathe in order to produce parts per specification.
- Set up and operate manual machine tools to manufacture parts per specification.
- Use applied mathematics to solve shop problems.
Certificate of Proficiency
MANUFACTURING OCCUPATIONS

A strong foundation in production, machining, and welding processes provides access to many jobs in industries that utilize machine tools and fabrication processes to produce goods. The Manufacturing Occupations Certificate of Proficiency also provides courses that can be applied to more specialized degrees and certificates, allowing graduates to add to their skills as they advance in their careers.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Manufacturing Occupations Certificate of Proficiency, you must complete a minimum of 47 - 49 credits. The credits must include the following:

Communication: 5 credits – ENGL 099 (was ENGL 100) or ENGL 100
OR ENGL 101
OR ENGL 110
OR ENGL 110 Industrial Communications (ENGL 110 recommended)

Health: 3 credits – HLTH 100 Occupational Safety & Health OR MFG 105 Industrial Safety.

Quantitative Skills: 5 credits – MATH 088/089 Pre-College Math II or higher (MATH 106 recommended)

Human Relations/Social Science: 5 credits – BUS 144 Management of Human Relations

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 150</td>
<td></td>
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<tr>
<td>BLPT 160</td>
<td></td>
</tr>
<tr>
<td>DRFT 107</td>
<td></td>
</tr>
<tr>
<td>MFG 130</td>
<td></td>
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<tr>
<td>MFG 230</td>
<td></td>
</tr>
<tr>
<td>TECH 100</td>
<td></td>
</tr>
<tr>
<td>WELD 158</td>
<td></td>
</tr>
<tr>
<td>MASP 107</td>
<td></td>
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<tr>
<td>MASP 111</td>
<td></td>
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<tr>
<td>MASP 111</td>
<td></td>
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<tr>
<td>MFG 115</td>
<td></td>
</tr>
<tr>
<td>WELD 105</td>
<td></td>
</tr>
</tbody>
</table>

Take one of the following courses: 3, 4 or 5 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 150</td>
<td></td>
</tr>
<tr>
<td>BLPT 160</td>
<td></td>
</tr>
<tr>
<td>DRFT 107</td>
<td></td>
</tr>
<tr>
<td>MFG 130</td>
<td></td>
</tr>
<tr>
<td>MFG 230</td>
<td></td>
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<tr>
<td>TECH 100</td>
<td></td>
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<tr>
<td>WELD 158</td>
<td></td>
</tr>
<tr>
<td>MASP 107</td>
<td></td>
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<tr>
<td>MASP 111</td>
<td></td>
</tr>
<tr>
<td>MASP 111</td>
<td></td>
</tr>
<tr>
<td>MFG 115</td>
<td></td>
</tr>
<tr>
<td>WELD 105</td>
<td></td>
</tr>
</tbody>
</table>

Total credits required to earn this certificate: 47 - 49

Students completing this program should acquire the following skills and abilities:

- Describe basic manufacturing, machining, and welding processes.
- Read and interpret industrial blueprints.
- Use applied mathematics to solve shop problems.
- Set up and operate manual machine tools to manufacture parts per specification.
- Perform basic welding techniques commonly used for incidental welding in industry.
- Work safely in an industrial setting.
Mathematics is the language of science and a powerful mechanism for describing the world around us. A mathematics degree at Lower Columbia College prepares students for bachelor’s programs in areas such as mathematics, statistics, or math education.

**Degree Requirements**

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I **AND** ENGL& 102 Composition II **AND** SPCH 110 Intro to Public Speaking **OR** SPCH 114 Small Group Communication.

**Quantitative/Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

**Humanities:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees** including 5 credits of lab courses. At least 10 credits must be in physical, biological, and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Minimum transferable credits required to earn this degree: 90**

**Recommended Elective Courses**

*It is recommended that sequence courses be completed at one institution.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH&amp; 151*</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 152*</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 254* (was MATH 154)</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>5</td>
</tr>
<tr>
<td>MATH 215</td>
<td>5</td>
</tr>
<tr>
<td>MATH 220</td>
<td>5</td>
</tr>
<tr>
<td>MATH 240</td>
<td>5</td>
</tr>
</tbody>
</table>

Students completing this program should acquire the following skills and abilities:

- Prepared for transfer to a mathematics program at a 4-year college or university.
- Communicate mathematical ideas and concepts using appropriate symbols and terminology.
- Apply mathematical principles to find solutions to real world problems.
- Construct a reasonable argument to defend the overall importance of mathematics.
- Promote evidence-based thinking and decision making.
ASSOCIATE IN MATH EDUCATION
■ DTA/MRP

Mathematics is the language of science and a powerful mechanism for describing the world around us. A mathematics degree at Lower Columbia College prepares students for bachelor’s programs in areas such as mathematics, statistics, or math education.

Degree Requirements

To earn an Associate in Math Education-DTA/MRP degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 10 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II

**Quantitative/Symbolic Reasoning Skills:** 5 credits – MATH& 151* Calculus I (must be proficient in MATH 098/099 Pre-College Math III).

**Humanities:** 15-20 credits – SPCH 110 Intro to Public Speaking AND an additional 10 credits from the distribution list for transfer degrees. No more than 10 credits from any one discipline. No more than 5 credits in foreign language at the 100 level. No more than 5 credits of performance classes are allowed.

**Social Science:** 15-20 credits – PSYC& 100 General Psychology AND an additional 10 credits from the distribution list for transfer degrees. No more than 10 credits allowed from any one discipline.

**Natural Science:** 15-20 credits – MATH& 152* Calculus II AND 10 credits of science from Physics, Chemistry, Geology, or Biology from the distribution list for transfer degrees. Shall include at least one lab course.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

**Other Requirements:**

* It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC&amp; 205</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 153*</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 254*(was MATH 154)</td>
<td>5</td>
</tr>
<tr>
<td>MATH 220</td>
<td>5</td>
</tr>
</tbody>
</table>

If additional credits are required, the remainder shall be fully transferable as defined by the receiving institution.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

**Students completing this program should acquire the following skills and abilities:**

- Prepared for transfer to a mathematics program at a 4-year college or university.
- Communicate mathematical ideas and concepts using appropriate symbols and terminology.
- Apply mathematical principles to find solutions to real world problems.
- Construct a reasonable argument to defend the overall importance of mathematics.
- Promote evidence-based thinking and decision making.
Associate in Applied Science

MEDICAL ASSISTING

Students develop knowledge and skills necessary for employment in clinical and administrative-support areas of medical clinics. See Learning Outcomes for details.

The Lower Columbia College Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). This assures the highest standards in a medical assisting curriculum and qualifies the successful graduate to sit for the national Certified Medical Assistant (CMA) exam administered by the American Association of Medical Assistants (AAMA).

Degree Requirements

To earn an Associate in Applied Science – Medical Assisting degree, you must complete a minimum of 90 credits. For any course to count toward this degree, a grade of C or better is required. The credits must include the following:

Communications: 10 credits - ENGL 101 English Composition I AND ENGR 102 Composition II.

Quantitative Skills: 5 credits – MATH 105 Mathematics for Health Sciences.

Human Relations/Social Science: 5 credits – PSYC& 100 General Psychology (counts for Human Relations and Social Science)

Natural Sciences/Humanities: 5 credits from the distribution list for Professional/Technical degrees.

Diversity: 5 credits - From the Diversity course list. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: ART& 100 Art Appreciation:DIV.

Strongly Advised:
MEDA 205 Certification Review for Medical Assisting, 2 cr

NOTE: MATH 105, AH 104, 114, and BTEC 101 all with a grade of C or better must be completed before spring quarter prior to MEDA 120 and MEDA 161.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 104</td>
<td>Healthcare Foundations</td>
<td>2</td>
</tr>
<tr>
<td>AH 114</td>
<td>Healthcare Communication Skills</td>
<td></td>
</tr>
<tr>
<td>BTEC 100</td>
<td>Computer Keyboarding OR</td>
<td>1-3</td>
</tr>
<tr>
<td>BTEC 145</td>
<td>Intro to Word OR</td>
<td>1-5</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Apps</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 171</td>
<td>Medical Reception Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 172</td>
<td>Medical Office Procedure</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 173</td>
<td>Computers in the Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 101</td>
<td>Medical Vocabulary I OR</td>
<td></td>
</tr>
<tr>
<td>BTEC 181</td>
<td>Medical Terminology I</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 102</td>
<td>Medical Vocabulary II OR</td>
<td></td>
</tr>
<tr>
<td>BTEC 182</td>
<td>Medical Terminology II</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 120</td>
<td>Survey of Human A &amp; P</td>
<td>5</td>
</tr>
<tr>
<td>MEDA 122</td>
<td>Law &amp; Ethics for the Medical Office</td>
<td>2</td>
</tr>
<tr>
<td>MEDA 145</td>
<td>Medical Lab Procedures</td>
<td>6</td>
</tr>
<tr>
<td>MEDA 161*</td>
<td>Exam Room Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>MEDA 162*</td>
<td>Exam Room Procedures II</td>
<td>4</td>
</tr>
<tr>
<td>MEDA 165</td>
<td>Meds in MEDA &amp; Diseases</td>
<td>5</td>
</tr>
<tr>
<td>MEDA 190</td>
<td>MEDA to Preceptorship</td>
<td>5</td>
</tr>
<tr>
<td>MEDA 195</td>
<td>Medical Assisting Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

*MEDA 161 or MEDA 162 fulfill the Health requirement.

Electives: 5 credits – choose courses numbered 100 or above from the distribution list for Professional/Technical degrees.

Total credits required to earn this degree: 90-92

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Demonstrate competencies in cognitive (knowledge), psychomotor (performance), and affective (attitude and behavior) domains for employment as a medical assistant in clinical and administrative-support areas of healthcare.
- Prepare for the national certification exam sponsored by the American Association of Medical Assistants.
- Meets the Washington State educational requirements for Medical Assistant-Certified.
Certificate of Proficiency

MEDICAL ASSISTING

Students develop knowledge and skills necessary for employment in clinical and administrative-support areas of medical clinics.

The Lower Columbia College Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). This assures the highest standards in a medical assisting curriculum and qualifies the successful graduate to sit for the national Certified Medical Assistant (CMA) exam administered by the American Association of Medical Assistants (AAMA).

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Medical Assisting Certificate of Proficiency, you must complete a **minimum of 70 credits**. For any course to count toward this certificate, a grade of C or better is required. The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I **OR** BUS 119 Business Communications.

**Quantitative Skills:** 5 credits – MATH 105 Mathematics for Health Sciences.

**Human Relations/ Social Science:** 5 credits – PSYC& 100 General Psychology.

Strongly Advised:


**NOTE:** MATH 105, AH 104, 114, and BTEC 100 or BTEC 145 all with a grade of C or better must be completed before spring quarter prior to MEDA 120 and MEDA 161.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 104</td>
<td>2</td>
</tr>
<tr>
<td>AH 114</td>
<td>2</td>
</tr>
<tr>
<td>BTEC 100</td>
<td>1-3</td>
</tr>
<tr>
<td>BTEC 145</td>
<td>1-5</td>
</tr>
<tr>
<td>CS 110</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 171</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 172</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 173</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 101</td>
<td>3</td>
</tr>
<tr>
<td>BTEC 181</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 102</td>
<td>3</td>
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<td>BTEC 182</td>
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<td>MEDA 165</td>
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<td>MEDA 190</td>
<td>5</td>
</tr>
<tr>
<td>MEDA 195</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate:** 70-72

Students completing this program should acquire the following skills and abilities:

- Demonstrate competencies in cognitive (knowledge), psychomotor (performance), and affective (attitude and behavior) domains for employment as a medical assistant in clinical and administrative-support areas of healthcare.
- Prepare for the national certification exam sponsored by the American Association of Medical Assistants.
- Prepare for state credentialing as a “Medical Assistant-Certified” according to educational requirements in the law relating to Medical Assistants, Engrossed Substitute House Bill 1515.
Provide students with basic theory and application to successfully design, implement, and manage computer networks.

This certificate is part of the Information Technology AAS degree. Many of the courses listed have prerequisite course requirements. Students intending to complete as a stand-alone certificate should have prior course work or experience in the Information Technology field. See advisor for information or course catalog for list of prerequisites for each course.

Certificate Requirements

To earn a Networking Certificate of Completion, you must complete a minimum of 15 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 212</td>
<td>Local Area Networks: Theory and Application</td>
<td>5</td>
</tr>
<tr>
<td>CS 213</td>
<td>Local Area Networks: Theory and Application</td>
<td>5</td>
</tr>
<tr>
<td>CS 249</td>
<td>Advanced Operating Systems</td>
<td>5</td>
</tr>
</tbody>
</table>

Some courses have prerequisites; see catalog descriptions and CS advisor.

Total credits required to earn this certificate: 15

Students completing this program should acquire the following skills and abilities:

- Distinguish between the various network topologies and types.
- Complete requirements in preparation for the Network+ examination, including network topologies, standard hardware, software, media and protocols.
- Distinguish between various network connection technologies, such as hubs, routers, and switches.
- Review the various network protocols, such as TCP/IP, internet protocol addressing, including IPv4, and IPv6.
- Apply learning to developing, implementing, monitoring, and optimizing, a Local Area Network.
Certificate of Proficiency
PROCESS MANUFACTURING

The Process Manufacturing Certificate of Proficiency is designed to prepare production operators for industries using high technology equipment and processes. Producers of coated steel, biofuels, energy, petrochemicals, pulp and paper, pharmaceuticals, food, and dimensional lumber, are some of the industries that use automation to control production processes.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Process Manufacturing Certificate of Proficiency, you must complete a **minimum of 60 credits**. The credits must include the following:

**Communications:** 5 credits – ENGL 099 (was ENGL 100) College-Ready English II OR ENGL& 101 English Composition I OR ENGL 110 Industrial Communications. (ENGL 110 recommended)

**Health:** 3 credits – HLTH 100 Occupational Safety & Health OR MFG 105 Industrial Safety.

**Quantitative Skills:** 5 credits – MATH 088/089 Pre-College Math II or higher (MATH 106 recommended)

**Human Relations/Social Science:** 5 credits – BUS 144 Management of Human Relations

<table>
<thead>
<tr>
<th>Program Requirements:</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 110 Intro to Microcomputer Apps</td>
<td>3</td>
</tr>
<tr>
<td>MFG 120 Quality Assurance</td>
<td>4</td>
</tr>
<tr>
<td>MFG 140 Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>PMFG 110 Industrial Maintenance</td>
<td>5</td>
</tr>
<tr>
<td>PMFG 150 Electrical/Electronic Fundamentals</td>
<td>5</td>
</tr>
<tr>
<td>PMFG 151 Process Control Equipment</td>
<td>6</td>
</tr>
<tr>
<td>PMFG 152 Process Control Systems</td>
<td>5</td>
</tr>
<tr>
<td>PMFG 201 Electrical Control Equipment</td>
<td>3</td>
</tr>
<tr>
<td>PMFG 202 Electric Motors</td>
<td>2</td>
</tr>
<tr>
<td>PMFG 210 Advanced Industrial Maintenance</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate:** 60

Students completing this program should acquire the following skills and abilities:
- Work safely in an industrial environment.
- Identify and describe the various components commonly used in process manufacturing operations.
- Describe basic concepts related to mechanical, hydraulic/pneumatic, and electrical systems.
- Describe basic process control strategies.
- Participate effectively as a part of a work team.
- Describe various approaches used to ensure quality in manufacturing operations.
- Perform basic maintenance tasks on common process manufacturing devices.
Certificate of Completion

PROGRAMMING

Provides students with basic knowledge in order to design and implement programs written in various languages.

This certificate is part of the Information Technology AAS degree. Many of the courses listed have prerequisite course requirements. Students intending to complete as a stand-alone certificate should have prior course work or experience in the Information Technology field. See advisor for information or course catalog for list of prerequisites for each course.

Certificate Requirements

To earn a Programming Certificate of Completion, you must complete a **minimum of 15 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 175</td>
<td>Event-Driven Programming</td>
<td>5</td>
</tr>
<tr>
<td>CS 270</td>
<td>Data Structures I</td>
<td>5</td>
</tr>
<tr>
<td>CS 275</td>
<td>Object-Oriented Programming in Java</td>
<td>5</td>
</tr>
</tbody>
</table>

Some courses have prerequisites; see catalog descriptions and CS advisor.

*Total credits required to earn this certificate: 15*

**Students completing this program should acquire the following skills and abilities:**

- Design and implement event-driven programs using Visual Basics.
- Design and implement object-oriented programs using Java.
- Design and implement programs that make use of elementary data structures to organize computer memory to hold structured data.
Certificate of Completion

WEB DEVELOPMENT

Provides students with basic theory and application to begin to successfully design, implement, and maintain basic website structure.

This certificate is part of the Information Technology AAS degree. Many of the courses listed have prerequisite course requirements. Students intending to complete as a stand-alone certificate should have prior course work or experience in the Information Technology field. See advisor for information or course catalog for list of prerequisites for each course.

Certificate Requirements

To earn a Web Development Certificate of Completion, you must complete a **minimum of 13 credits**. The credits must include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 162</td>
<td>Beginning Photoshop Design</td>
<td>3</td>
</tr>
<tr>
<td>CS 230</td>
<td>Database Development</td>
<td>5</td>
</tr>
<tr>
<td>CS 175</td>
<td>Event-Driven Programming <strong>OR</strong></td>
<td></td>
</tr>
<tr>
<td>CS 275</td>
<td>Object-Oriented Programming in Java</td>
<td>5</td>
</tr>
</tbody>
</table>

Some courses have prerequisites; see catalog descriptions and CS advisor.

**Total credits required to earn this certificate: 13**

**Students completing this program should acquire the following skills and abilities:**

- Design and implement web pages using XHTML and CSS.
- Complete a disciplined approach for designing, implementing database structures appropriate for website data.
- Implement principles of graphic design in Photoshop appropriate to website development.
The music program is designed to serve both those planning to major in music and the general college student. Those who intend to major in this field and seek employment in education or performance are expected to participate in an ensemble and to take private lessons.

**Degree Requirements**

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I **AND** ENGL& 102 Composition II **AND** SPCH 110 Intro to Public Speaking **OR** SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits from the following: MATH& 107 or higher with the exception of MATH& 131.

**Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees, including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

**Diversity:** 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Example: MUSC 117 Music Cultures of the World:DIV

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

- MUSC 101/2/3 Theory and Musicianship I, II, III 5 ea
- MUSC 106/7/8 Group Piano I Instruction 2 ea
- MUSC 206/7/8 Group Piano II Instruction 2 ea
- MUSC 111/2/3 Ear Training I, II, III 1 ea
- MUSC 126/226 Applied Lessons 1 ea
- MUSC 130 Jazz Ensemble 2
- MUSC 141/2/3 Concert Choir I, II, III 1.5 ea
- MUSC 241/2/3 Concert Choir IV, V, VI 1.5 ea
- MUSC 145 Voice Class 2
- MUSC 150 Symphonic Band 2
- MUSC 151/2/3 Show Choir I, II, III 1.5 ea
- MUSC 251/2/3 Show Choir IV, V, VI 1.5 ea
- MUSC 222 Opera Workshop 2

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Minimum transferable credits required to earn this degree: 90**

**Students completing this program should acquire the following skills and abilities:**

- Students will demonstrate the ability to read, with accuracy, rhythmic, melodic and harmonic music examples through performance, analysis and/or composition.
- Students will also demonstrate, through solo and ensemble performances, interpretation of musical style and expression, as well as technical proficiency.
- Ultimately, students will develop practice habits, such as time management, teamwork, intrinsic motivation and discipline that will strengthen their work ethic and apply to any field they pursue.
Prepare for upper division coursework in nursing. This option is designed for students who intend to complete the Associate Degree Nursing program at LCC and continue their education for a baccalaureate degree in nursing at an institution that offers an RN to BSN program.

**Degree Requirements**

To earn an Associate in Arts-DTA, Nursing degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 English Composition II AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

**Quantitative Skills:** 5 credits – MATH& 107 or higher with the exception of MATH& 131.

**Humanities:** 15 credits – selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits - SOC& 101 Intro to Sociology; DIV, PSYC& 200 Lifespan Psychology, plus 5 credits from a third discipline (ANTH 206 recommended).

**Natural Sciences:** 32 credits - BIOL& 160 (or BIOL& 170 or BIOL 211), BIOL& 241, BIOL& 242, BIOL& 260, CHEM& 121, NUTR& 101. Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses.

**Electives:** (Fulfilled by the required Nursing Program Requirements)

**NOTE:** Washington or Oregon State certification as a Nursing Assistant is required for admission to the LCC Nursing Program. (NURS 090 (8 credits) is the Nursing Assistant course offered at LCC. Does not fulfill any degree requirements.

**Total credits required to earn this degree: 90**

**Students completing this program should acquire the following skills and abilities:**

- Understand foundational concepts in the natural sciences (anatomy, physiology, microbiology, chemistry, nutrition) and the social sciences of sociology and psychology as they apply to the field of nursing and healthcare.
- Communicate effectively in written and spoken English.
- Comprehension of the role of statistical concepts in research.
- A basic understanding of the many influences on and expression of the human condition and human experience.
- Critical thinking and use of the nursing process.
- Competencies at the Registered Nurse entry-to-practice level as provider of care, manager of care, and member of the discipline of nursing.
- Prepared for the nursing licensure examination and employment as a registered nurse.
- Prepared for further education in nursing.
Certificate of Completion

NURSING ASSISTANT

The Nursing Assistant Certificate provides the content and experiences for students to achieve mastery of the state-defined competencies required to assist in giving basic nursing care to residents/clients under the supervision of a licensed nurse.

Certificate Requirements

To earn a Nursing Assistant – Certificate of Completion, you must complete a minimum of 8 credits. The credits must include the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 090</td>
<td>Nursing Assistant</td>
<td>8</td>
</tr>
</tbody>
</table>

NOTES:
- Nursing 090 is open to all students.
- Call 360.442.2860 for registration information.
- This course meets Washington Department of Social and Health Service’s requirements as an approved Nursing Assistant course. Students who successfully complete this course are eligible to take Washington State written and skills tests to become an NA-C.

Total credits required to earn this certificate: 8

Students completing this program should acquire the following skills and abilities:
- Demonstrate mastery of competencies and standards of practice as listed in WAC 246-841-400 required to assist in giving basic nursing care to residents/clients under the supervision of licensed nurse.
Certificate of Proficiency

PRACTICAL NURSE

The Lower Columbia College Nursing Program is committed to providing excellence in nursing education that encompasses critical thinking, competencies in the role of provider of care, manager of care and member of the discipline of nursing, with an emphasis on life-long learning. Nursing is a demanding and rewarding profession that requires strong communication skills, excellent problem-solving abilities, focused concentration when performing a task, attention to detail, the ability to work well with others, and extensive knowledge of the sciences.

The Practical Nurse Certificate is part of the Nursing program pathway. The nursing program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the Accreditation Commission for Education in Nursing. Upon completion of the Practical Nurse Certificate of Proficiency, students are eligible to apply to be a licensed practical nurse. Successful completion of the national Council Licensure Examination for Licensed Practical/Vocational Nurses (NCLEX-PN) is required for licensure.

Certificate Requirements

To earn a Practical Nurse – Certificate of Proficiency, you must complete a minimum of 81 credits. The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I.
Quantitative Skills: 5 credits - MATH 210 Elements of Statistics.
Social Sciences: 5 credits - PSYC& 100 General Psychology.
Natural Sciences: 6 credits - BIOL& 241 Human A & P 1 W/Lab.

NOTE: MATH210, PSYC&100 and BIOL&241 must be completed prior to applying to the nursing program. Because nursing admission is competitive, it is advisable to complete all prerequisite and supportive courses prior to applying. There is no separate admission for the Practical Nurse level as this is an “exit option” of the ADN program.

Program Requirements:

- AH 104 Healthcare Foundations 2
- AH 114 Healthcare Communication Skills 2
- BIOL& 242 Human A & P 2 W/Lab 6
- BIOL& 260 Microbiology 5
- NURS 101 Nursing Foundations 5
- NURS 102 Basic Nursing I 5
- NURS 103 Basic Nursing II 5
- NURS 104 Family Nursing 5
- NURS 111 Nursing Foundations-Clinical 5
- NURS 112 Basic Nursing I - Clinical 5
- NURS 113 Basic Nursing II - Clinical 5
- NURS 114 Basic Nursing III - Clinical 5
- PSYC& 200 Lifespan Psychology 5

Total credits required to earn this certificate: 81

Students completing this certificate should acquire the following skills and abilities:

- Critical thinking per the definition of Global Skills developed by the LCC faculty: Apply objective, valid methods of inquiry and problem-solving to draw rationale, ethical and coherent conclusions.
- Competencies at the Licensed Practical Nurse entry-to-practice level as provider of care, manager of care, and member of the discipline of nursing.
- Be prepared for entry-level employment as a Registered Nurse.
- Be prepared for further education in nursing.
The Lower Columbia College Nursing Program is committed to providing excellence in nursing education that encompasses critical thinking, competencies in the role of provider of care, manager of care and member of the discipline of nursing, with an emphasis on life-long learning. Nursing is a demanding and rewarding profession that requires strong communication skills, excellent problem-solving abilities, focused concentration when performing a task, attention to detail, the ability to work well with others, and extensive knowledge of the sciences. The nursing program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the Accreditation Commission for Education in Nursing. Upon completion of the AAS-T in nursing, students are eligible to apply for licensure as a registered nurse. Successful completion of the National Council Licensure Examination for Registered nurses (NCLEX-RN) is required for licensure.

**Degree Requirements**

To earn an Associate in Applied Science – Transfer Registered Nurse degree, you must complete a **minimum of 122 credits**. For any course to count toward this degree, a grade of C or better is required.

The credits must include the following:

- **Communications:** 5 credits - ENGL& 101 English Composition I.
- **Quantitative Skills:** 5 credits - MATH 210 Elements of Statistics.
- **Social Sciences:** 5 credits - PSYC& 100 General Psychology.
- **Natural Sciences:** 6 credits - BIOL& 241 Human A & P 1 W/Lab.
- **Diversity:** 5 credits - SOC& 101 Intro to Sociology: DIV

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**NOTE:** MATH210, PSYC&100 and BIOL&241 must be completed prior to applying to the nursing program. Because nursing admission is competitive, it is advisable to complete all prerequisite and supportive courses prior to applying.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 104</td>
<td>Healthcare Foundations</td>
<td></td>
</tr>
<tr>
<td>AH 114</td>
<td>Healthcare Communication Skills</td>
<td></td>
</tr>
<tr>
<td>AH 230</td>
<td>Mgmt. Issues in Healthcare</td>
<td></td>
</tr>
<tr>
<td>BIOL&amp; 242</td>
<td>Human A &amp; P 2 W/Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL&amp; 260</td>
<td>Microbiology</td>
<td></td>
</tr>
<tr>
<td>CHEM&amp; 121</td>
<td>Intro to Chemistry</td>
<td></td>
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<tr>
<td>NURS 101</td>
<td>Nursing Foundations</td>
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<tr>
<td>NURS 102</td>
<td>Basic Nursing I</td>
<td></td>
</tr>
<tr>
<td>NURS 103</td>
<td>Basic Nursing II</td>
<td></td>
</tr>
<tr>
<td>NURS 104</td>
<td>Family Nursing</td>
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<tr>
<td>NURS 111</td>
<td>Nursing Foundations-Clinical</td>
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<tr>
<td>NURS 112</td>
<td>Basic Nursing I - Clinical</td>
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<tr>
<td>NURS 113</td>
<td>Basic Nursing II - Clinical</td>
<td></td>
</tr>
<tr>
<td>NURS 114</td>
<td>Basic Nursing III - Clinical</td>
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</tr>
<tr>
<td>NURS 201</td>
<td>Adv. Comprehensive Nursing I</td>
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</tr>
<tr>
<td>NURS 202</td>
<td>Adv. Comprehensive Nursing II</td>
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<tr>
<td>NURS 203</td>
<td>Adv. Comprehensive Nursing III</td>
<td></td>
</tr>
<tr>
<td>NURS 221</td>
<td>Adv. Comp. Nursing I - Clinical</td>
<td></td>
</tr>
<tr>
<td>NURS 222</td>
<td>Adv. Comp. Nursing II - Clinical</td>
<td></td>
</tr>
<tr>
<td>NURS 223</td>
<td>Adv. Comp. Nursing III - Clinical</td>
<td></td>
</tr>
<tr>
<td>PSYC&amp; 200</td>
<td>Lifespan Psychology</td>
<td></td>
</tr>
</tbody>
</table>

**Total credits required to earn this degree:**

122

**Students completing this program should acquire the following skills and abilities:**

- Critical thinking per the definition of Global Skills developed by the LCC faculty: Apply objective, valid methods of inquiry and problem-solving to draw rationale, ethical and coherent conclusions.
- Competencies at the Registered Nurse entry-to-practice level as provider of care, manager of care, and member of the discipline of nursing.
- Be prepared for entry-level employment as a Registered Nurse.
- Be prepared for further education in nursing.
The Lower Columbia College Nursing Program is committed to providing excellence in nursing education that encompasses critical thinking, competencies in the role of provider of care, manager of care and member of the discipline of nursing, with an emphasis on life-long learning. Nursing is a demanding and rewarding profession that requires strong communication skills, excellent problem-solving abilities, focused concentration when performing a task, attention to detail, the ability to work well with others, and extensive knowledge of the sciences.

The nursing program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the Accreditation Commission for Education in Nursing. Upon completion of the AAS-T in nursing, students are eligible to apply for licensure as a registered nurse. Successful completion of the National Council Licensure Examination for Registered nurses (NCLEX-RN) is required for licensure.

**Degree Requirements**

To earn an Associate in Applied Science – Transfer Registered Nurse LPN2RN degree, you must complete a **minimum of 122-124 credits**. For any course to count toward this degree, a grade of C or better is required.

The credits must include the following:

**Communications:** 5 credits - ENGL& 101 English Composition I.

**Quantitative Skills:** 5 credits – MATH 210 Elements of Statistics.

**Social Sciences:** 5 credits – PSYC& 100 General Psychology.

**Natural Sciences:** 6 credits – BIOL& 241 Human A & P 1 W/Lab.

**Diversity:** 5 credits – SOC& 101 Intro to Sociology:DIV

To be considered for admission to the LPN2RN level of the nursing program, the student must have graduated from a state board of nursing approved PN program and hold a current PN license. Accepted PN license is equivalent to **44 credits** (NURS 101, 102, 103, 104, 111, 112, 113, 114 and AH 104, and AH 114). All non-nursing courses (except AH 209 and AH 230) must be completed with a grade of C or higher prior to applying for nursing program admission.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 230</td>
<td>1</td>
</tr>
<tr>
<td>BIO&amp; 242</td>
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<tr>
<td>BIO&amp; 260</td>
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<td>CHEM&amp; 121</td>
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<tr>
<td>NURS 201</td>
<td>5</td>
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<td>NURS 202</td>
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<tr>
<td>NURS 203</td>
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<td>NURS 209*</td>
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<tr>
<td>Mgmt. Issues in Healthcare</td>
<td>1</td>
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<tr>
<td>Human A &amp; P 2 W/Lab</td>
<td>6</td>
</tr>
<tr>
<td>Microbiology</td>
<td>5</td>
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<tr>
<td>Intro to Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Adv. Comprehensive Nursing I</td>
<td>5</td>
</tr>
<tr>
<td>Adv. Comprehensive Nursing II</td>
<td>5</td>
</tr>
<tr>
<td>Adv. Comprehensive Nursing III</td>
<td>5</td>
</tr>
<tr>
<td>Nursing Success</td>
<td>2</td>
</tr>
<tr>
<td>Adv. Comp. Nursing I - Clinical</td>
<td>5</td>
</tr>
<tr>
<td>Adv. Comp. Nursing II - Clinical</td>
<td>5</td>
</tr>
<tr>
<td>Adv. Comp. Nursing III - Clinical</td>
<td>5</td>
</tr>
<tr>
<td>Lifespan Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

*not required for recent LCC graduates; see advisor.

**Total credits required to earn this degree:** 122-124

Students completing this program should acquire the following skills and abilities:

- Critical thinking per the definition of Global Skills developed by the LCC faculty: Apply objective, valid methods of inquiry and problem-solving to draw rationale, ethical and coherent conclusions.
- Competencies at the Registered Nurse entry-to-practice level as provider of care, manager of care, and member of the discipline of nursing.
- Be prepared for entry-level employment as a Registered Nurse.
- Be prepared for further education in nursing.

[lowercolumbia.edu/catalog]
Associate in Applied Science – Transfer

REGISTERED NURSE - LPN2RN-eLearning

(Requires LPN license)

The Lower Columbia College Nursing Program is committed to providing excellence in nursing education that encompasses critical thinking, competencies in the role of provider of care, manager of care and member of the discipline of nursing, with an emphasis on life-long learning. Nursing is a demanding and rewarding profession that requires strong communication skills, excellent problem-solving abilities, focused concentration when performing a task, attention to detail, the ability to work well with others, and extensive knowledge of the sciences.

The nursing program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the Accreditation Commission for Education in Nursing. Upon completion of the AAS-T in nursing, students are eligible to apply for licensure as a registered nurse. Successful completion of the National Council Licensure Examination for Registered nurses (NCLEX-RN) is required for licensure.

Degree Requirements

To earn an Associate in Applied Science – Transfer Registered Nurse LPN2RN eLearning degree, you must complete a minimum of 126 credits. For any course to count toward this degree, a grade of C or better is required.

The credits must include the following:

- **Communications:** 5 credits - ENGL& 101 English Composition I.
- **Quantitative Skills:** 5 credits – MATH 210 Elements of Statistics.
- **Social Sciences:** 5 credits – PSYC& 100 General Psychology.
- **Natural Sciences:** 6 credits – BIOL& 241 Human A & P 1 W/Lab.
- **Diversity:** 5 credits - SOC& 101 Intro to Sociology:DIV.

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

To be considered for admission to the LPN2RN level of the nursing program, the student must have graduated from a state board of nursing approved PN program and hold a current PN license. Accepted PN license is equivalent to 44 credits (NURS 101, 102, 103, 104, 111, 112, 113, 114 and AH 104, and AH 114). All non-nursing courses (except AH 209 and AH 230) must be completed with a grade of C or higher prior to applying for nursing program admission.

BIOL& 241, BIOL& 242, BIOL& 260, CHEM& 121, ENGL& 101, MATH 210, PSYC& 100 and PSYC& 200 must be completed with a grade of C or higher prior to applying for the LPN2RN Program.

**Program Requirements:**

- BIOL& 242 Human A & P 2 W/Lab 6
- BIOL& 260 Microbiology 5
- CHEM& 121 Intro to Chemistry 5
- NURS 241 Essential Concepts of Nursing Practice 4
- NURS 242 Nursing Throughout the Lifespan 3
- NURS 243 Behavioral Health 3
- NURS 244 Physiological Health I 4
- NURS 245 Physiological Health II 4
- NURS 246 Skills Laboratory 2
- NURS 247 Clinical Practicum 10
- NURS 248 Advanced Clinical Practicum 5
- PSYC& 200 Lifespan Psychology 5

**Total credits required to earn this degree:** 126

Students completing this program should acquire the following skills and abilities:

- Critical thinking per the definition of Global Skills developed by the LCC faculty: Apply objective, valid methods of inquiry and problem-solving to draw rationale, ethical and coherent conclusions.
- Competencies at the Registered Nurse entry-to-practice level as provider of care, manager of care, and member of the discipline of nursing.
- Be prepared for entry-level employment as a Registered Nurse.
- Be prepared for further education in nursing.
Associate in Applied Science – Transfer

REGISTERED NURSE-RONE

Rural Outreach Nursing Education

The Lower Columbia College Nursing Program is committed to providing excellence in nursing education that encompasses critical thinking, competencies in the role of provider of care, manager of care and member of the discipline of nursing, with an emphasis on life-long learning. Nursing is a demanding and rewarding profession that requires strong communication skills, excellent problem-solving abilities, focused concentration when performing a task, attention to detail, the ability to work well with others, and extensive knowledge of the sciences.

The nursing program is approved by the Washington State Nursing Care Quality Assurance Commission and accredited by the Accreditation Commission for Education in Nursing. Upon completion of the AAS-T in nursing, students are eligible to apply for licensure as a registered nurse. Successful completion of the National Council Licensure Examination for Registered nurses (NCLEX-RN) is required for licensure.

Degree Requirements

To earn an Associate in Applied Science – Transfer Registered Nurse - RONE degree, you must complete a minimum of 126 credits. For any course to count toward this degree, a grade of C or better is required. The credits must include the following:

Communications: 5 credits - ENGL& 101 English Composition I.
Quantitative Skills: 5 credits – MATH 210 Elements of Statistics.
Social Sciences: 5 credits – PSYC& 100 General Psychology.
Diversity: 5 credits – SOC& 101 Intro to Sociology:DIV

NOTE: MATH 210, PSYC& 100 and BIOL& 241 must be completed prior to applying to the nursing program. Because nursing admission is so competitive, it is advisable to complete prerequisite and supportive courses prior to applying.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 104</td>
<td>Healthcare Foundations</td>
<td>2</td>
</tr>
<tr>
<td>AH 114</td>
<td>Healthcare Communication Skills</td>
<td>2</td>
</tr>
<tr>
<td>BIOL&amp; 242</td>
<td>Human A &amp; P 2 W/Lab</td>
<td>6</td>
</tr>
<tr>
<td>BIOL&amp; 260</td>
<td>Microbiology</td>
<td>5</td>
</tr>
<tr>
<td>CHEMS&amp; 121</td>
<td>Intro to Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>NURS 101</td>
<td>Nursing Foundations</td>
<td>5</td>
</tr>
<tr>
<td>NURS 102</td>
<td>Basic Nursing I</td>
<td>5</td>
</tr>
<tr>
<td>NURS 103</td>
<td>Basic Nursing II</td>
<td>5</td>
</tr>
<tr>
<td>NURS 104</td>
<td>Family Nursing</td>
<td>5</td>
</tr>
<tr>
<td>NURS 111</td>
<td>Nursing Foundations-Clinical</td>
<td>5</td>
</tr>
<tr>
<td>NURS 112</td>
<td>Basic Nursing I – Clinical</td>
<td>5</td>
</tr>
<tr>
<td>NURS 113</td>
<td>Basic Nursing II – Clinical</td>
<td>5</td>
</tr>
<tr>
<td>NURS 114</td>
<td>Basic Nursing III – Clinical</td>
<td>5</td>
</tr>
<tr>
<td>NURS 241</td>
<td>Essential Concepts of Nursing Prac</td>
<td>4</td>
</tr>
<tr>
<td>NURS 242</td>
<td>Nursing Throughout the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>NURS 243</td>
<td>Behavioral Health</td>
<td>3</td>
</tr>
<tr>
<td>NURS 244</td>
<td>Physiological Health I</td>
<td>4</td>
</tr>
<tr>
<td>NURS 245</td>
<td>Physiological Health II</td>
<td>4</td>
</tr>
<tr>
<td>NURS 246</td>
<td>Skills Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>NURS 247</td>
<td>Clinical Practicum</td>
<td>10</td>
</tr>
<tr>
<td>NURS 248</td>
<td>Advanced Clinical Practicum</td>
<td>5</td>
</tr>
<tr>
<td>PSYC&amp; 200</td>
<td>Lifespan Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

Total credits required to earn this degree: 126

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Critical thinking per the definition of Global Skills developed by the LCC faculty: Apply objective, valid methods of inquiry and problem-solving to draw rationale, ethical and coherent conclusions.
- Competencies at the Registered Nurse entry-to-practice level as provider of care, manager of care, and member of the discipline of nursing.
- Be prepared for entry-level employment as a Registered Nurse.
- Be prepared for further education in nursing.
PHILOSOPHY Academic Plan

The field of philosophy focuses on methods and systems of reasoning, critical examination of philosophic answers to questions of values and obligations, and justification of ethical beliefs. Begin studies for transfer to a baccalaureate institution to complete an advanced degree. Possible career fields include research, consulting and education.

Degree Requirements

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications**: 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II, AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

- **Quantitative/ Symbolic Reasoning Skills**: 5 credits - MATH& 107 or higher (excluding MATH& 131).

- **Humanities**: 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

- **Social Sciences**: 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. No more than 10 credits from any one discipline.

- **Natural Sciences**: 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees** including 5 credits of lab courses. At least 10 credits must be in physical, biological, and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

- **Diversity**: 5 credits – From the **Diversity course list**. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

- **Electives**: 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL&amp; 101</td>
<td>5</td>
</tr>
<tr>
<td>PHIL 120</td>
<td>5</td>
</tr>
<tr>
<td>PHIL 210</td>
<td>5</td>
</tr>
<tr>
<td>PHIL 260</td>
<td>5</td>
</tr>
<tr>
<td>PSYC&amp; 100</td>
<td>5</td>
</tr>
<tr>
<td>SOC&amp; 101</td>
<td>5</td>
</tr>
</tbody>
</table>

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: **90**

Students completing this program should acquire the following skills and abilities:

- Ability to understand and restate accurately in different words positions or arguments with which are initially disagreed upon or which are entirely new.
- The skill to temporarily detach or remain neutral to discern strengths and weaknesses in different positions.
- Awareness of the importance of holding coherent and integrated views.
- Independence of thought through which responsibility is taken for understanding and evaluating ideas in careful, responsible ways.
- Ability to reflect upon own views and consider whether other positions are stronger.

Revised May 2014
PHYSICS Academic Plan

A bachelor’s degree in physics is an excellent preparation for advanced study in astronomy and astrophysics, atmospheric science, biophysics, chemical physics, computer science and engineering. Students can complete the first two years of studies toward a bachelor’s degree and can also specialize in physics education. Professional careers include research positions with government, universities and private industrial laboratories, observatories and science museums.

Degree Requirements

To earn an Associate in Sciences - Transfer degree, you must complete a minimum of 90 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 5 credits - ENGL 101 English Composition I.

Quantitative/Symbolic Reasoning Skills: 10 credits – MATH 151* Calculus I AND MATH 152* Calculus II.

Humanities/Social Sciences: 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. A minimum of 5 credits in Humanities, and a minimum of 5 credits in Social Science, and an additional 5 credits in either Humanities or Social Science.

Diversity: 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.
Example: SOC 101 – Introduction to Sociology:DIV.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Pre-Major Requirements: 353 credits

*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 161*</td>
<td>5</td>
</tr>
<tr>
<td>MATH 153*</td>
<td>5</td>
</tr>
<tr>
<td>MATH 254* (was MATH 154)</td>
<td>5</td>
</tr>
<tr>
<td>MATH 220</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 221*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 222*</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 223*</td>
<td>5</td>
</tr>
</tbody>
</table>

Remaining credits: 25 credits - These remaining credits must include program advisor approved credits and should be based on the requirements of the specific discipline at the baccalaureate institution the student selects to attend.

Recommended courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 101</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 162*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 163*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 261*</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 262*</td>
<td>5</td>
</tr>
<tr>
<td>CS 170</td>
<td>5</td>
</tr>
<tr>
<td>MATH 240</td>
<td>5</td>
</tr>
</tbody>
</table>

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Developed the foundational background in physics and mathematics to further pursue a Bachelor’s degree in Physics.
- Ability to abstract and then analyze problems or situations in physics through basic concepts and principles.
- Communicate effectively in a scientific setting.
- Developed an appreciation of the nature of physics both as a science consisting of a few fundamental principles of sweeping power, and as a process where one develops physical principles through observation, hypothesis, and experiment.
The study of political science concentrates on the philosophy, structure and function of government. Career opportunities exist in law, private business, public administration, nonprofit organizations and teaching. Complete studies to transfer to earn a bachelor's degree.

Degree Requirements

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

- **Communications:** 15 credits - ENGL& 101 English Composition I **AND** ENGL& 102 Composition II, **AND** SPCH 110 Intro to Public Speaking **OR** SPCH 114 Small Group Communication.

- **Quantitative/Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

- **Humanities:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

- **Social Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

- **Natural Sciences:** 15 credits - Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

- **Diversity:** 5 credits - From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Introduction to Sociology; DIV.

- **Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

Recommended Elective Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS&amp; 101</td>
<td>Intro to Political Science</td>
<td>5</td>
</tr>
<tr>
<td>POLS 107</td>
<td>Comparative Government</td>
<td>5</td>
</tr>
<tr>
<td>POLS&amp; 202</td>
<td>American Government</td>
<td>5</td>
</tr>
<tr>
<td>POLS&amp; 203</td>
<td>International Relations</td>
<td>5</td>
</tr>
<tr>
<td>POLS 220</td>
<td>The Law and Social Issues</td>
<td>5</td>
</tr>
</tbody>
</table>

Students completing this program should acquire the following skills and abilities:

- Clearly communicate complex information and concepts in writing and/or verbally.
- Examine political issues and policies from diverse perspectives, evaluating them in terms of both private and public good.
- Apply social science reasoning to a range of political issues and problems.
- Critically question political claims, analyzing their supporting evidence and identifying their underlying values and assumptions.
- Comprehend how politics influences students and their world.
Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

**NOTE:**
The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. **The LCC program advisor and the appropriate department chair must approve the intended program.**

### Degree Requirements

To earn an Associate in Arts & Sciences degree, you must complete a **minimum of 90 credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

**Communications:** 15 credits

- ENGL& 101 English Composition I 5
- ENGL& 102 Composition II or ENGL& 235 Technical Writing 5
- SPCH 110 Intro to Public Speaking 5

**Diversity:** 5 credits – from the **Diversity course list.**

Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

**Electives:** 5 credits

One (1) year of foreign language recommended. Completion of the courses as prescribed by faculty and accepted by the advisor and Department Chairperson is necessary.

**Students completing this program should acquire the following skills and abilities:**

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of Organisms; evolution; and ecology.

- Biology students will express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Biology students will apply various techniques and processes using information, data, and situations, to draw logical, rational, ethical and coherent conclusions.
- Major-level biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills and abstract contexts.
Associate in Arts & Sciences

PRE-DENTAL HYGIENE Academic Plan

Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

NOTE: The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. The LCC program advisor and the appropriate department chair must approve the intended program.

Degree Requirements

To earn an Associate in Arts & Sciences degree, you must complete a minimum of 90 credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

Communications: 15 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL&amp; 101 English Composition I</td>
<td>5</td>
</tr>
<tr>
<td>ENGL&amp; 102 Composition II or ENGL&amp; 235 Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 110 Intro to Public Speaking</td>
<td>5</td>
</tr>
</tbody>
</table>

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

Program Requirements: 38 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 241* Human A &amp; P 1</td>
<td>6</td>
</tr>
<tr>
<td>BIOL&amp; 242* Human A &amp; P 2</td>
<td>6</td>
</tr>
<tr>
<td>BIOL&amp; 260 Microbiology</td>
<td>6</td>
</tr>
<tr>
<td>CHEM&amp; 121 Intro to Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 131 Intro to Organic/Biochemistry</td>
<td>5</td>
</tr>
<tr>
<td>NUTR&amp; 101 Nutrition</td>
<td>5</td>
</tr>
<tr>
<td>MATH 098/099 Pre-College Math III</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives: 37 credits

One (1) year of foreign language recommended. Completion of the courses as prescribed by faculty and accepted by the advisor and Department Chairperson is necessary.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Students completing this program should acquire the following skills and abilities:

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of Organisms; evolution; and ecology.
- Biology students will express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Biology students will apply various techniques and processes using information, data, and situations, to draw logical, rational, ethical and coherent conclusions.
- Major-level biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills and abstract contexts.
**Associate in Arts & Sciences**

**PRE-DENTISTRY Academic Plan**

Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

**NOTE:**

The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. **The LCC program advisor and the appropriate department chair must approve the intended program.**

### Degree Requirements

To earn an Associate in Arts & Sciences degree, you must complete a **minimum of 90 credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

**Communications:** 15 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL&amp; 101 English Composition I</td>
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</tr>
<tr>
<td>ENGL&amp; 102 Composition II or ENGL&amp; 235 Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 110 Intro to Public Speaking</td>
<td>5</td>
</tr>
</tbody>
</table>

**Diversity:** 5 credits – from the **Diversity course list.** Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

**Program Requirements:** 50 credits

*It is recommended that sequence courses be completed at one institution.*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 211* Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 212* Majors Biology Animal</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 213* Majors Biology Plant</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 161* General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162* General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163* General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 261* Organic Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 262* Organic Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 263* Organic Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 151 Calculus I</td>
<td>5</td>
</tr>
</tbody>
</table>

**Electives:** 25 credits

One (1) year of foreign language recommended. Completion of the courses as prescribed by faculty and accepted by the advisor and Department Chairperson is necessary.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Students completing this program should acquire the following skills and abilities:**

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of Organisms; evolution; and ecology.
- Biology students will express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Biology students will apply various techniques and processes using information, data, and situations, to draw logical, rational, ethical and coherent conclusions.
- Major-level biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills and abstract contexts.
Associate in Arts & Sciences

PRE-MEDICINE Academic Plan

Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

NOTE:
The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. The LCC program advisor and the appropriate department chair must approve the intended program.

Degree Requirements
To earn an Associate in Arts & Sciences degree, you must complete a minimum of 90 credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

Communications: 15 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL&amp; 101 English Composition I</td>
<td>5</td>
</tr>
<tr>
<td>ENGL&amp; 102 Composition I or ENGL&amp; 235 Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 110 Intro to Public Speaking</td>
<td>5</td>
</tr>
</tbody>
</table>

Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

Electives: 25 credits

Program Requirements: 50 credits

*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 211* Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 212* Majors Biology Animal</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 213* Majors Biology Plant</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 161* General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162* General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163* General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 261* Organic Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 262* Organic Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 263* Organic Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 151 Calculus I</td>
<td>5</td>
</tr>
</tbody>
</table>

Students completing this program should acquire the following skills and abilities:

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of Organisms; evolution; and ecology.
- Biology students will express ideas and information in writing in a format that is clear and appropriate to a science-literate audience.
- Biology students will apply various techniques and processes using information, data, and situations, to draw logical, rational, ethical and coherent conclusions.
- Major-level biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills and abstract contexts.
Associate in Arts & Sciences

PRE-PHARMACY Academic Plan

Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

NOTE:
The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. The LCC program advisor and the appropriate department chair must approve the intended program.

Degree Requirements

To earn an Associate in Arts & Sciences degree, you must complete a minimum of 90 credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

Communications: 15 credits
ENGL& 101 English Composition I 5
ENGL& 102 Composition II or
ENGL& 235 Technical Writing 5
SPCH 110 Intro to Public Speaking 5

Diversity: 5 credits – from the Diversity course list.
Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Program Requirements: 55 credits

It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 211* Majors Biology Cellular</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 212* Majors Biology Animal</td>
<td>5</td>
</tr>
<tr>
<td>BIOL&amp; 213* Majors Biology Plant</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 161* General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162* General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163* General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 261* Organic Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 262* Organic Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 263* Organic Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 148 Business Calculus or</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 151 Calculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210 Elements of Statistics</td>
<td>5</td>
</tr>
</tbody>
</table>

Electives: 20 credits

One (1) year of foreign language recommended. Completion of the courses as prescribed by faculty and accepted by the advisor and Department Chairperson is necessary.

Students completing this program should acquire the following skills and abilities:

- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
- Majors-level biology students will demonstrate proficiency with life process mechanisms such as biological chemistry; cellular metabolism; heredity, anatomy and physiology of major animal organ systems; plant structure, as well as transport and reproductive function; diversity and classification of Organisms; evolution; and ecology.

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Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

**NOTE:**
The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. The LCC program advisor and the appropriate department chair must approve the intended program.

### Degree Requirements

To earn an Associate in Arts & Sciences degree, you must complete a **minimum of 90 credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

#### Communications: 15 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL&amp; 101</td>
<td>English Composition I</td>
<td>5</td>
</tr>
<tr>
<td>ENGL&amp; 102</td>
<td>Composition II or Technical Writing</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Intro to Public Speaking</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Diversity: 5 credits – from the **Diversity course list**

Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

#### Electives: 7+ credits

One (1) year of foreign language recommended. Completion of the courses as prescribed by faculty and accepted by the advisor and Department Chairperson is necessary.

### Program Requirements: 68 credits

*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 241*</td>
<td>Human A &amp; P I</td>
<td>6</td>
</tr>
<tr>
<td>BIOL&amp; 242*</td>
<td>Human A &amp; P II</td>
<td>6</td>
</tr>
<tr>
<td>BIOL&amp; 260</td>
<td>Microbiology</td>
<td>6</td>
</tr>
<tr>
<td>CHEM&amp; 161*</td>
<td>General Chemistry w/Lab I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>General Chemistry w/Lab II</td>
<td>5</td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td>General Chemistry w/Lab III</td>
<td>5</td>
</tr>
<tr>
<td>MATH&amp; 141</td>
<td>Precalculus I</td>
<td>5</td>
</tr>
<tr>
<td>MATH 210</td>
<td>Elements of Statistics</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 114*</td>
<td>General Physics I w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 115*</td>
<td>General Physics II w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 116*</td>
<td>General Physics III w/Lab</td>
<td>5</td>
</tr>
<tr>
<td>PSYC&amp; 100</td>
<td>General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>PSYC&amp; 200</td>
<td>Lifespan Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

### Students completing this program should acquire the following skills and abilities:

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Associate in Arts & Sciences

PRE-VETERINARY MEDICINE

Academic Plan

Careers in medical professions require several years of advanced study. Medical coursework is rigorous and entry into professional schools is very competitive. Students planning a career in medicine, medical technology, dentistry, pharmacy or veterinary can begin their studies at LCC and gain a solid foundation in the basic sciences required in those fields. A number of medical schools require a foreign language.

NOTE:
The program-specific Associate in Arts & Sciences (AA) transfer degree is for students who are sure of the baccalaureate institution they wish to attend. This may be a good option for students who plan to earn a bachelor’s degree in a professional field. Students must work closely with their program advisor to design a program that will fulfill the transfer institution’s general admission and program entry requirements. Students should expect to have courses evaluated on a course-by-course basis upon transfer to the upper division. The LCC program advisor and the appropriate department chair must approve the intended program.

Degree Requirements

To earn an Associate in Arts & Sciences degree, you must complete a minimum of 90 credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. The credits must include the following:

**Communications:** 15 credits
- ENGL& 101 English Composition I 5
- ENGL& 102 Composition II or ENGL& 235 Technical Writing 5
- SPCH 110 Intro to Public Speaking 5

**Diversity:** 5 credits – from the Diversity course list.
Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by 'DIV' attached to the course title. Example: SOC& 101 – Intro to Sociology:DIV.

**Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.**

Program Requirements: 50 credits
*It is recommended that sequence courses be completed at one institution.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL&amp; 211*</td>
<td>Majors Biology Cellular</td>
</tr>
<tr>
<td>BIOL&amp; 212*</td>
<td>Majors Biology Animal</td>
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<td>BIOL&amp; 213*</td>
<td>Majors Biology Plant</td>
</tr>
<tr>
<td>CHEM&amp; 161*</td>
<td>General Chemistry w/Lab I</td>
</tr>
<tr>
<td>CHEM&amp; 162*</td>
<td>General Chemistry w/Lab II</td>
</tr>
<tr>
<td>CHEM&amp; 163*</td>
<td>General Chemistry w/Lab III</td>
</tr>
<tr>
<td>CHEM&amp; 261*</td>
<td>Organic Chemistry w/Lab I</td>
</tr>
<tr>
<td>CHEM&amp; 262*</td>
<td>Organic Chemistry w/Lab II</td>
</tr>
<tr>
<td>CHEM&amp; 263*</td>
<td>Organic Chemistry w/Lab III</td>
</tr>
<tr>
<td>MATH&amp; 151</td>
<td>Calculus I</td>
</tr>
</tbody>
</table>

**Electives:** 25 credits – choose from the following list:
- BIOL& 241* Human A & P 1 6
- BIOL& 242* Human A & P 2 6
- BIOL& 260 Microbiology 6
- PHYS& 114* General Physics I w/Lab 5
- PHYS& 115* General Physics II w/Lab 5
- PHYS& 116* General Physics III w/Lab 5

One (1) year of foreign language recommended. Completion of the courses as prescribed by faculty and accepted by the advisor and Department Chairperson is necessary.

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- Biology students will become familiar with the (empirical) scientific method of problem solving.
- Majors-level biology students will perform competitively with their peers at four-year institutions or professional programs.
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- Major-level biology students will achieve competency with numbers and graphical skills to interpret and communicate quantifiable information, and apply mathematical and statistical skills and abstract contexts.
PSYCHOLOGY Academic Plan

Work as a guidance counselor, a clinical psychologist, a social worker or an educator after earning your bachelor's degree. Psychology courses also supplement majors in health sciences, social sciences, business and law.

Degree Requirements

To earn an Associate in Arts-Direct Transfer Agreement degree, you must complete a minimum of 90 transferable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II, AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

**Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline. No more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Example: SOC& 101 – Introduction to Sociology:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses:**

- ANTH& 206 Cultural Anthropology 5
- PSYC& 100 General Psychology 5
- PSYC& 200 Lifespan Psychology 5
- PSYC 204 Applied Psychology 5
- PSYC 214 Psychology of Adjustment 5
- PSYC& 220 Abnormal Psychology 5
- SOC& 101 Intro to Sociology 5

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

Minimum transferable credits required to earn this degree: 90

Students completing this program should acquire the following skills and abilities:

- Develop an understanding of scientific methods of research as they apply to the study of human behavior and mental processes.
- Comprehend how the individual’s immediate environment, past experience, physiological makeup, development and socio-cultural context influence thinking, emotions and behavior.
- Comprehend and articulate the major psychological theories and contemporary trends in psychological research.
- Develop some degree of self-awareness with strategies for fostering greater psychological health.
- Acquire the knowledge necessary to enjoy meaningful personal and professional relationships; as students, parents, domestic partners, co-workers and community members.
- Develop an understanding of statistics as related to correlational and causal research.
- Demonstrate effective communication skills by reading primary and secondary source material, discussing course content, and writing coherent essays.
**Associate in Arts – Direct Transfer Agreement**

**SOCI OLOGY Academic Plan**

Study the origin, development, organization and functioning of human society as you prepare for a career in social work, public opinion research, public relations, guidance counseling, education, personnel relations or community planning. Complete a two-year degree or studies to transfer to earn a bachelor’s degree.

**Degree Requirements**

To earn an Associate in Arts Direct Transfer Agreement degree, you must complete a minimum of 90 transferrable credits in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II, AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

**Humanities:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the distribution list for transfer degrees including 5 credits of lab courses. At least 10 credits must be in physical, biological and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement. ANTH& 205, BIOL& 100 and 5 additional credits from physical and/or earth science are recommended. BIOL& 100 meets the laboratory requirement.

**Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

<table>
<thead>
<tr>
<th>Recommended Elective Courses</th>
<th>credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 207 Ar Who:DIV</td>
<td>5</td>
</tr>
<tr>
<td>PSYC&amp; 100 General Psychology</td>
<td>5</td>
</tr>
<tr>
<td>SOC 210 Human Sexuality</td>
<td>5</td>
</tr>
<tr>
<td>SOC 225 Race &amp; Ethnicity:DIV</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 104 Interpersonal Communication</td>
<td>5</td>
</tr>
</tbody>
</table>

Diversity and Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Minimum transferable credits required to earn this degree: 90**

**Students completing this program should acquire the following skills and abilities:**

- Develop an understanding of scientific methods of research as they apply to the study of human societies.
- Develop an understanding of the interpretive approaches to the study of human social interaction.
- Develop an understanding of the role that social structure, social institutions and social identity play in shaping human thought and action.
- Develop a basic understanding of crucial social institutions such as the family that has a paramount role in the structuring of social life and human development.
- Develop a basic understanding of the issues of race, ethnicity, class, gender and religion.
- Develop a basic understanding of the crucial issues of social, economic, and political inequality and the role that a history of social exclusion has played in perpetuating these inequalities.
- Gain an understanding of the role that dynamic social interaction of a society's history plays in the emergence of human diversity.
- Recognize the role that society has played in creating and perpetuating human misery (social problems).
The speech program provides general education courses that assist students in improving communication skills and their understanding of communication. Credit and advanced skills may also be earned by participating in LCC’s Program for intercollegiate debate competition.

### Degree Requirements

To earn an Associate in Arts - Direct Transfer Agreement degree, you must complete a **minimum of 90 transferable credits** in courses numbered 100 or above with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

**Communications:** 15 credits - ENGL& 101 English Composition I AND ENGL& 102 Composition II, AND SPCH 110 Intro to Public Speaking OR SPCH 114 Small Group Communication.

**Quantitative/ Symbolic Reasoning Skills:** 5 credits - MATH& 107 or higher (excluding MATH& 131)

**Humanities:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. No more than 5 credits in foreign language at the 100 level, no more than 10 credits from any one discipline. No more than 5 credits in performance/skills courses are allowed.

**Social Sciences:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees**. No more than 10 credits from any one discipline.

**Natural Sciences:** 15 credits – Selected from at least three disciplines on the **distribution list for transfer degrees** including 5 credits of lab courses. At least 10 credits must be in physical, biological, and/or earth sciences. No more than 10 credits from any one discipline and no more than 5 credits from Math and Engineering. Courses used to satisfy this requirement may not be used to satisfy the Quantitative Skills requirement.

**Diversity:** 5 credits – From the **Diversity course list**. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title.

Example: SPCH 109 – Intercultural Communication:DIV.

**Electives:** 25 credits - See advisor for approved list of electives. No more than 15 credits may be taken from the Restricted Course List.

**Recommended Elective Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH 104</td>
<td>Interpersonal Communication</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 109</td>
<td>Intercultural Communication:DIV</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 136, 137, 138, 236, 237, 238</td>
<td>Intercollegiate Debate</td>
<td>2 ea.</td>
</tr>
<tr>
<td>SPCH 126, 127, 128, 226, 227, 228</td>
<td>Competitive Public Speaking</td>
<td>2 ea.</td>
</tr>
<tr>
<td>SPCH 209</td>
<td>Rhetorical Criticism/Pop Culture:DIV</td>
<td>5</td>
</tr>
</tbody>
</table>

If not used for Communication requirement:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH 110</td>
<td>Intro to Public Speaking OR</td>
<td>5</td>
</tr>
<tr>
<td>SPCH 114</td>
<td>Small Group Communication</td>
<td>5</td>
</tr>
</tbody>
</table>

**Minimum transferable credits required to earn this degree:** 90

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**Students completing this program should acquire the following skills and abilities:**

- Express an understanding of the complexity of communication theory
- Identify and describe factors that contribute to effective communication
- Identify and perform skills and behaviors that make communication more effective
- Effectively use verbal and nonverbal communication to inform and persuade to diverse audiences
Associate in Technology – DTA/MRP

TECHNOLOGY

This program is applicable to students planning to prepare for industrial/mechanical technologies and mechanical/electrical/computer engineering technology majors at Central Washington University (CWU), Eastern Washington University (EWU) and Western Washington University (WWU). The various technology options are manufacturing, electronics, design & construction, and technology education. This is a non-ABET program leading to a BS in Technology.

Degree Requirements

To earn an Associate in Technology DTA/MRP degree, you must complete a minimum of 91 transferable credits with a cumulative grade point average (GPA) of at least 2.0. A course cannot be credited toward more than one distribution or skill area.

The credits must include the following:

Communications: 10 credits – ENGL& 101 English Composition I AND ENGL& 235 Technical Writing.


Humanities: 15 credits – SPCH 110 Introduction to Public Speaking AND 10 credits selected from the Humanities distribution list for transfer degrees. At least one class must be in a field other than speech and no more than 5 credits may be in a world language. No more than 5 credits in performance/skills class.

Social Sciences: 15 credits – Selected from at least two disciplines from the Social Sciences distribution list for transfer degrees, no more than 10 credits in a single discipline.

Natural Sciences: 15 credits – PHYS& 114 General Physics I w/Lab AND CHEM& 161 General Chemistry with Lab AND CS 170 Fundamentals of Computer Programming.


Diversity: 5 credits – from the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: SOC& 101 – Introduction to Sociology: DIV.

Electives: 20 credits - Select courses appropriate for intended major and intended bachelor’s institutions. A maximum of 10 credits may be in college-level courses as defined by the community college and the remainder shall be fully transferable as defined by the receiving institution.

Minimum transferable credits required to earn this degree: 91

Recommended Elective Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS&amp; 115</td>
<td>5</td>
</tr>
<tr>
<td>PHYS&amp; 116</td>
<td>5</td>
</tr>
</tbody>
</table>

Students completing this program should acquire the following skills and abilities:

- Broad background in critical thinking, writing, and analysis that emphasizes quantitative skills.
- Demonstrate understanding of fundamentals in biology, chemistry, math, and physics in preparation for a Bachelor’s degree.
- Evaluate scientific validity of data use in persuasive communication.
- Effective communication.
- Demonstrate an understanding of units of measurement and precision.
- Demonstrate an understanding that scientific theories and methods have developed and continue to develop over time.
- Problem solving, work in teams, self assessment, and lifelong learning skills.
Prepare for the state commercial welding examination or qualify for welding jobs in manufacturing, maintenance, or instruction through LCC’s welding program. Students must successfully complete the Washington Association of Building Officials (WABO) Qualification Test before earning a degree in Welding.

**Degree Requirements**

To earn an Associate in Applied Science - Welding degree, you must complete a **minimum of 94 credits** with a cumulative grade point average (GPA) of at least 2.0 in the program requirements. The credits must include the following:

- **Communications:** 5 credits – ENGL 110 Industrial Communications recommended.
- **Health:** 3 credits – HLTH 100 Occupational Safety and Health
- **Quantitative Skills:** 5 credits – MATH 106 Industrial Mathematics recommended.
- **Human Relations/Social Sciences:** 5 credits – BUS 144 Management of Human Relations:DIV recommended.
- **Humanities/Natural Sciences:** 5 credits – MFG 130 Materials Science OR TECH 100 Advanced Principles of Technology.
- **Diversity:** 5 credits – From the Diversity course list. Courses that meet this requirement may also be used toward other graduation requirements. Diversity courses are listed in the quarterly schedule and identified by ‘DIV’ attached to the course title. Example: BUS 144 Management of Human Relations:DIV.

**Program Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 160</td>
<td>5</td>
</tr>
<tr>
<td>CS 110</td>
<td>3</td>
</tr>
<tr>
<td>WELD 151</td>
<td>6</td>
</tr>
<tr>
<td>WELD 152</td>
<td>10</td>
</tr>
<tr>
<td>WELD 158</td>
<td>5</td>
</tr>
<tr>
<td>WELD 221</td>
<td>10</td>
</tr>
<tr>
<td>WELD 222</td>
<td>6</td>
</tr>
<tr>
<td>WELD 254</td>
<td>10</td>
</tr>
<tr>
<td>WELD 255</td>
<td>6</td>
</tr>
<tr>
<td>WELD 256</td>
<td>10</td>
</tr>
<tr>
<td>WELD 070/075</td>
<td>0</td>
</tr>
</tbody>
</table>

Distribution Lists are available in the Lower Columbia College Academic Catalog and at lowercolumbia.edu/catalog.

**Total credits required to earn this degree:** 94

**Students completing this program should acquire the following skills and abilities:**

- Exhibit & maintain essential employability behaviors
- Be introduced to and practice industry safety guidelines
- Achieve competency with numerous manual and semi-automatic welding processes
- Demonstrate proper set-up and use of various welding and fabricating equipment
- Troubleshoot and solve basic welding, fabricating and equipment problems
- Pass one WABO certification or industry-accepted simulated welding test
- Exhibit knowledge of material types, fabrication, layout, cutting processes, and techniques
- Demonstrate appropriate oral and written communication with customers, co-workers, and supervisors
- Analyze and interpret prints and drawings for welding and fabricating
- Instill good housekeeping practices as this lends to a safer and more efficient work environment
- Stay current with new and emerging technologies
Certificate of Proficiency

WELDING

The welding certificate program helps prepare the student for employment in manufacturing or maintenance.

Gainful Employment Program Disclosure Data
http://www.lowercolumbia.edu/programs/gainful-employment.aspx

Certificate Requirements

To earn a Welding Certificate of Proficiency, you must complete a **minimum of 57 credits**. The credits must include the following:

- **Communications**: 5 credits – ENGL 110 Industrial Communications.
- **Health**: 3 credits – HLTH 100 Occupational Safety and Health.
- **Quantitative Skills**: 5 credits – MATH 106 Industrial Mathematics.
- **Human Relations, Social Sciences**: 5 credits – BUS 144 Management of Human Relations:DIV.

**Program Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLPT 160</td>
<td>Blueprint Reading for Welders</td>
<td>5</td>
</tr>
<tr>
<td>CS 110</td>
<td>Intro to Microcomputer Applications</td>
<td>3</td>
</tr>
<tr>
<td>WELD 151</td>
<td>Intro to Oxy-Acetylene</td>
<td>6</td>
</tr>
<tr>
<td>WELD 152</td>
<td>Intro to Arc Welding</td>
<td>10</td>
</tr>
<tr>
<td>WELD 158</td>
<td>Welding Theory &amp; Fabrication</td>
<td>5</td>
</tr>
<tr>
<td>WELD 221</td>
<td>Wire Machine</td>
<td>10</td>
</tr>
</tbody>
</table>

**Total credits required to earn this certificate**: 57

Students completing this program should acquire the following skills and abilities:

- Demonstrate standard shop safety procedures.
- Operate various shop fabrication equipment.
- Problem solving skills.
- Entry level technical skills.
COURSE DESCRIPTIONS

From accounting to welding, LCC offers a wide range of classes to help students achieve professional success and personal enrichment. The college may add classes for new programs or to update current programs during the year. Visit our web site at lowercolumbia.edu or check the quarterly class schedule publication for the most up-to-date course offerings.

Symbols used in course description

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Course meets distribution credit in Humanities.</td>
</tr>
<tr>
<td>HA</td>
<td>Course meets distribution credit in Humanities only for AAS and AAS-T degrees.</td>
</tr>
<tr>
<td>SS</td>
<td>Course meets distribution credit in Social Science.</td>
</tr>
<tr>
<td>SSA</td>
<td>Course meets distribution credit in Social Science only for AAS and AAS-T degrees.</td>
</tr>
<tr>
<td>NS</td>
<td>Course meets distribution credit in Natural Sciences.</td>
</tr>
<tr>
<td>NSA</td>
<td>Course meets distribution credit in Natural Sciences only for AAS and AAS-T degrees.</td>
</tr>
<tr>
<td>NSL</td>
<td>**Course meets distribution credits in Natural Sciences as a lab course.</td>
</tr>
<tr>
<td>P</td>
<td>*Course meets distribution credits as a performance based course.</td>
</tr>
<tr>
<td>&amp;</td>
<td>Course is part of the Washington Community Colleges’ Common Course Numbering system.</td>
</tr>
<tr>
<td>F</td>
<td>Course usually offered Fall Quarter.</td>
</tr>
<tr>
<td>W</td>
<td>Course usually offered Winter Quarter.</td>
</tr>
<tr>
<td>Sp</td>
<td>Course usually offered Spring Quarter.</td>
</tr>
<tr>
<td>S</td>
<td>Course usually offered Summer Quarter.</td>
</tr>
</tbody>
</table>

Adult Basic Education (ABE)

**ABE 010 F,W,Sp,S 1-20 credits**
Beginning ABE Literacy Reading-Level 1

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE reading course.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

**ABE 011 F,W,Sp,S 1-20 credits**
Beginning ABE Literacy Writing-Level 1

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE writing course.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

**ABE 012 F,W,Sp,S 1-20 credits**
Beginning ABE Literacy Math-Level 1

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE integrated math course.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

**ABE 013 F,W,Sp,S 1-20 credits**
Beginning ABE Literacy Reading & Writing Level 1

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE integrated reading course.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.
ABE 014  F,W,Sp,S  1-20 credits
Beginning ABE Literacy Integrated-Level 1
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

ABE 015  F,W,Sp,S  1-20 credits
Beginning ABE Literacy Computer Technology & Job Readiness-1
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE and survival ESL technology and job readiness course.
Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

ABE 016  F,W,Sp,S  1-20 credits
Beginning ABE Literacy-Spanish Integrated-Level 1
Strengthen basic academic skills for native Spanish speakers in order to enhance their personal, social, and workplace environments in a Beginning Literacy Level ABE integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

ABE 020  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education Reading-Level 2
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Basic Education reading course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 021  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education Writing-Level 2
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in a Beginning Basic Education writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 022  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education Math-Level 2
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Beginning Basic Education math course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 023  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education Reading & Writing-Level 2
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Beginning Basic Education integrated reading and writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 024  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education Integrated-Level 2
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Beginning Basic Education integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 025  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education Computer Technology & Job Readiness-2
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in an ABE Beginning Basic Education reading and job readiness course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 026  F,W,Sp,S  1-20 credits
ABE Beginning Basic Education-Spanish Integrated-Level 2
Strengthen basic academic skills for native Spanish speakers in order to enhance their personal, social and workplace environments in an ABE Beginning Basic Education integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 201 to 210, or instructor permission.

ABE 030  F,W,Sp,S  1-20 credits
ABE Low Intermediate Basic Education Reading-Level 3
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Intermediate Basic Education reading course.
Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 031  F,W,Sp,S  1-20 credits
ABE Low Intermediate Basic Education Writing-Level 3
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Intermediate Basic Education writing course.
Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 032  F,W,Sp,S  1-20 credits
ABE Low Intermediate Basic Education Math-Level 3
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Intermediate Basic Education math course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 033  F,W,Sp,S  1-20 credits
ABE Low Intermediate Basic Education Reading & Writing-Level 3
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Intermediate Basic Education integrated reading and writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 211 to 220, or instructor permission.
ABE 033 F,W,Sp,S 1-20 credits
ABE Low Intermediate Basic Education Reading & Writing-Level 3
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Intermediate Basic Education integrated reading and writing course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 034 F,W,Sp,S 1-20 credits
ABE Low Intermediate Basic Education Integrated-Level 3
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Intermediate Basic Education integrated course (integrating reading, writing, math, and technology). Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 035 F,W,Sp,S 1-20 credits
ABE Low Intermediate Basic Education Computer Technology & Job Readiness-3
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a Low Intermediate Basic Education Level 3 ABE technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 036 F,W,Sp,S 1-20 credits
ABE Low Intermediate Basic Education Spanish Integrated-Level 3
Strengthen basic academic skills for native Spanish speakers in order to enhance their personal, social and workplace environments in an ABE Low Intermediate Basic Education integrated course (integrating reading, writing, math, and technology). Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 211 to 220, or instructor permission.

ABE 040 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Reading-Level 4
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Intermediate Basic Education reading course. Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 041 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Writing-Level 4
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Intermediate Basic Education writing course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 042 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Math-Level 4
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Intermediate Basic Education math course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 043 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Reading & Writing-Level 4
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Intermediate Basic Education integrated reading and writing course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 044 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Integrated-Level 4
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Intermediate Basic Education integrated course (integrating reading, writing, math, and technology). Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 045 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Computer Technology & Job Readiness-4
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a High Intermediate Basic Education Level 4 ABE technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 046 F,W,Sp,S 1-20 credits
ABE High Intermediate Basic Education Spanish Integrated-Level 4
Strengthen basic academic skills for native Spanish speakers in order to enhance their personal, social and workplace environments in an ABE High Intermediate Basic Education integrated course (integrating reading, writing, math, and technology). Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 221 to 235, or instructor permission.

ABE 050 F,W,Sp,S 1-20 credits
ABE Low Adult Secondary Education Reading-Level 5
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Adult Secondary Education reading course. Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 236 to 245, or instructor permission.
ABE 051  F,W,Sp,S  1-20 credits  
**ABE Low Adult Secondary Education Writing-Level 5**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Adult Secondary Education writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 236 to 245, or instructor permission.

ABE 052  F,W,Sp,S  1-20 credits  
**ABE Low Adult Secondary Education Math-Level 5**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Adult Secondary Education math course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 236 to 245, or instructor permission.

ABE 053  F,W,Sp,S  1-20 credits  
**ABE Low Adult Secondary Education Reading & Writing-Level 5**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Adult Secondary Education integrated reading and writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 236 to 245, or instructor permission.

ABE 054  F,W,Sp,S  1-20 credits  
**ABE Low Adult Secondary Education Integrated-Level 5**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE Low Adult Secondary Education integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 236 to 245, or instructor permission.

ABE 055  F,W,Sp,S  1-20 credits  
**ABE Low Adult Secondary Computer Technology & Job Readiness-5**
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a Low Adult Secondary Education Level 5 ABE technology and job readiness course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 236 to 245, or instructor permission.

ABE 056  F,W,Sp,S  1-20 credits  
**ABE Low Adult Secondary Education Spanish Integrated-Level 5**
Strengthen basic academic skills for native Spanish speakers in order to enhance their personal, social and workplace environments in an ABE Low Adult Secondary Education integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 236 to 245, or instructor permission.

ABE 060  F,W,Sp,S  1-20 credits  
**ABE High Adult Secondary Education Reading-Level 6**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education reading course.
Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 061  F,W,Sp,S  1-20 credits  
**ABE High Adult Secondary Education Writing-Level 6**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 062  F,W,Sp,S  1-20 credits  
**ABE High Adult Secondary Education Math-Level 6**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education math course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 063  F,W,Sp,S  1-20 credits  
**ABE High Adult Secondary Education Reading & Writing-Level 6**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education integrated reading and writing course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 064  F,W,Sp,S  1-20 credits  
**ABE High Adult Secondary Education Integrated-Level 6**
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education integrated course (integrating reading, writing, math, and technology).
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 065  F,W,Sp,S  1-20 credits  
**ABE High Adult Secondary Education Computer Technology & Job Readiness-6**
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a High Adult Secondary Education Level 6 ABE technology and job readiness course.
Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.
### ABE 066  F,W,Sp,S  1-20 credits

**ABE High Adult Secondary Education Spanish Integrated-Level 6**

Strengthen basic academic skills for native Spanish speakers in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education integrated course (integrating reading, writing, math, and technology).

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

### ABE 070  F,W,Sp,S  1-20 credits

**Educational Interview-ABE**

Develop and monitor a personal plan of action to reach personal, educational, and workplace goals through an orientation to the college community and the Transitional Studies program, resources, and services.

### ABE 071  F,W,Sp,S  1-20 credits

**I-BEST Academic Support-Level 1**

A Beginning Literacy Level ABE course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language Skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

### ABE 072  F,W,Sp,S  1-20 credits

**I-BEST Academic Support-Level 2**

A Beginning Basic Education ABE course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language Skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 201 to 210, or instructor permission.

### ABE 073  F,W,Sp,S  1-20 credits

**I-BEST Academic Support-Level 3**

A Low Intermediate Basic Education ABE course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 211 to 220, or instructor permission.

### ABE 074  F,W,Sp,S  1-20 credits

**I-BEST Academic Support-Level 4**

A High Intermediate Basic Education ABE course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 221 to 235, or instructor permission.

### ABE 075  F,W,Sp,S  1-20 credits

**I-BEST Academic Support-Level 5**

A Low Adult Secondary Education ABE course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 236 to 245, or instructor permission.

### ABE 076  F,W,Sp,S  1-20 credits

**I-BEST Academic Support-Level 6**

A High Adult Secondary Education ABE course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 246 to 255, or instructor permission.

### ABE 080  F,W,Sp,S  1-20 credits

**High Adult-Electives-ABE**

Strengthen a student’s communication, technology, and/or interpersonal skills in order to enhance their personal, social, and workplace environments in a high adult secondary education level 6 ABE Electives course. The course reflects knowledge gained through student selected classes and can be quantified by writing, demonstration and evidence collection.

### ABE 081  F,W,Sp,S  1-20 credits

**High Adult English-ABE**

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education writing course.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.
ABE 082 F,W,Sp,S 1-20 credits
High Adult Math-ABE
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE High Adult Secondary Education math course. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 083 F,W,Sp,S 1-20 credits
High Adult Sci & Lab-ABE
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE high adult secondary education science and lab science course. Students will gain an understanding of the natural world and science as a field of study. Intended for students with little or no science background. Includes lab. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 084 F,W,Sp,S 1-20 credits
High Adult History/Government-ABE
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE high adult secondary US History and Government education course. Focuses on the causes and effects of social, cultural, political, intellectual and economic change over the years in the United States. Examines the foundation of US government: key political ideas, theories, processes, and institutions. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 085 F,W,Sp,S 1-20 credits
High Adult Washington State History-ABE
Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a high adult secondary education ABE Washington State history course. Provides a social, political, economic history of the Pacific Northwest with particular emphasis on the State of Washington, including Native American history and gender/ethnic history. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ABE 086 F,W,Sp,S 1-20 credits
High Adult Contemporary History-ABE
Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ABE high adult secondary Contemporary History course. Focus on current world events, issues and problems. Highlights recent historical events and examines the causes and effects on geopolitics, environments, and population. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

Accounting (ACCT)

ACCT 101 F,W,Sp 5 credits
Introduction to Accounting Concepts
Provides students with an introduction to the field of accounting. Topics include the accounting cycle, accounting for and presentation of assets, liabilities, and owner's equity. Prerequisite: MATH 078/079 or TECH 078/079 or higher with a grade of Cor better.

ACCT 150 Sp 5 credits
Payroll Accounting and Business Tax Reporting
Gives students experience in payroll accounting and business tax reporting. Topics include: payroll processing, payroll tax return preparation, and preparation of excise tax returns. Prerequisite: MATH 088/089 or TECH 088/089 and ACCT 101 or instructor permission.
ACCT& 201  F,W  5 credits
Principles of Accounting I
Includes an introductory study of financial accounting and accounting theory. Includes an in-depth study of the accounting cycle for service organizations, provides an introduction to merchandising transactions, cash, marketable securities, receivables, and inventory. Prerequisite: MATH 088/089 or TECH 088/089. No previous accounting courses are required.

ACCT& 202  W,Sp  5 credits
Principles of Accounting II
Studies the components of a simple corporate balance sheet including application to transactions in areas such as current liabilities, long-term assets, bonds, and stocks. Also introduces the statement of cashflows and financial statement analysis. Financial accounting theory is discussed and applied throughout the course. Prerequisite: ACCT& 201 with a grade of C or better.

ACCT& 203  Sp  5 credits
Principles of Accounting III
Emphasis on accounting information as a planning and analysis tool to support management decision-making. Topics include manufacturing costs, job order costing, budgeting, break-even and cost-volume-profit analysis, relevant costs, capital investment decisions, and performance measurement. Prerequisite: ACCT& 201 (was ACCT 231) with a grade of C or better and basic spreadsheet skills.

ACCT 241  F  4 credits
Intro To Quickbooks
Provides students experience with a multi-function electronic accounting system. Students will learn to enter business transactions in the general ledger and subsidiary accounts such as payroll, accounts receivable, accounts payable, inventory, and fixed assets. Students will solve common accounting problems associated with the electronic accounting process. Prerequisite: ACCT 101 or ACCT& 201 and CS 110 or CS 111 or instructor permission.

ACCT 244  F  5 credits
Individual Income Taxation
Explores the fundamental concepts of federal income taxation as it relates to individuals with some attention to sole proprietorships. Topics include federal tax structure, income inclusions and exclusions, deductions, and credits. The course also includes practice in preparing individual returns and related schedules. Prerequisite: MATH 078/079 or TECH 078/079.

ACCT 260  W  5 credits
Certified Bookkeeper Prep
Designed to prepare students for the national Certified Bookkeeper examination. Topics include adjusting entries, correction of accounting errors, basic book and tax depreciation, payroll, inventory, and internal controls. Prerequisite: ACCT& 202 with a C or better or instructor permission.

Allied Health (AH)

AH 094  2 credits
Fundamentals of Caregiving
Focuses on the role of the caregiver in providing care to individuals residing in the home, adult family home, assisted living facility and in licensed boarding homes. Utilizes DSHS curriculum on client and caregiver rights, community resources, personal care, prevention of injury and infection, nutrition, assisting with medications, mobility needs, requirements for nurse delegation and observation and recording, and medical and physical conditions.

AH 095  1 credit
Modified Fundamentals of Caregiving
Focuses on the role of the caregiver in providing care to individuals residing in the home, adult family home, assisted living facility and in licensed boarding homes. Utilizes DSHS curriculum on client and caregiver rights, resources for the caregiver, prevention of infection, nutrition, assisting with medications, requirements for nurse delegation and observation and recording.

AH 096  1 credit
Nurse Delegation Training for Caregivers
Focuses on the role of the caregiver in providing care to individuals residing in the home, adult family home, assisted living facility and in licensed boarding homes. Utilizes DSHS curriculum providing an in-depth understanding of the nurse delegation law, basic medical knowledge of body systems and selected nursing tasks that may be delegated by a Registered Nurse.

AH 100  F,W,Sp  1 credit
Bloodborne Pathogens and Infection Control
Examines bloodborne illnesses: etiology, epidemiology, clinical manifestations, treatment, transmission, testing, infection control, legal, ethical, psychosocial and counselling issues. Fulfills Washington state Department of Licensing requirement for license renewal for persons governed by chapter 18. 130. RCW).

AH 104  F,W,Sp,S  2 credits
Healthcare Foundations
Provides introductory foundational skills for health care careers. Explores health care career opportunities, the history of health care, the structure and function of health care systems, as well as foundational legal, ethical, regulatory and safety issues in health care. Prerequisite: None. Concurrent requirement: For nursing students, must be taken concurrently with or before NURS 101.
### Healthcare Communication Skills

AH 114 F,W,Sp,S 2 credits

**Healthcare Communication Skills**

Provides introductory content on the communication process in health care settings. Introduces principles of communication, therapeutic communication skills, barriers to effective communication, and principles of verbal and written reporting in health care. Explores communication with clients who have complex needs, conflict resolution, team work, health care informatics, and cultural competency in health care. Techniques for acquiring employment will be discussed, and internet websites will be evaluated for credibility.

### Management Issues in Health Care

AH 230 F,W,Sp 1 credit

**Management Issues in Health Care**

Explores leadership, management, legal, ethical, and research issues essential to nursing practice.

Prerequisite: Concurrent enrollment in NURS 201

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### American Sign Language (ASL)

**American Sign Language I**

ASL& 121 F,W,S 5 credits

Introduces the basics of American Sign Language (ASL). Designed for students who have little or no previous knowledge of ASL. Readiness for learning will be approached via visual-gestural communication techniques, visual discrimination, and visual memory exercises. ASL questions, commands, and other simple sentence structures are introduced to develop rudimentary conversational skills in ASL. Information about the Deaf Community and Deaf Culture will be introduced.

**American Sign Language II**

ASL& 122 W,Sp 5 credits

Continues development of American Sign Language (ASL) skills, with primary focus on refining the use of basic ASL sentence types. Pronominalization, classifiers, spatial referencing, pluralization, and temporal and distributional aspects are introduced. Students learn routine communicative functions of the language: asking, requesting, providing clarification, and giving and asking for directions. Information about the Deaf Community and Deaf Culture is included.

Prerequisite: ASL& 121 with a grade of C or better.

**American Sign Language III:DIV**

ASL& 123 Sp 5 credits

Builds on skills learned in American Sign Language (ASL) II, adding more complex ASL grammatical features and vocabulary, short stories, narratives, and dialogues. Includes description of general surroundings, appropriate sequencing, temporal aspects and conditionals. Information about the Deaf Community and Deaf Culture will be included.

Prerequisite: ASL& 122 with a grade of C or better.

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### Anthropology (ANTH)

**American Cultural Diversity:DIV**

ANTH 109 S 5 credits

Examines the cultures of the United States from the perspectives of ethnicity, race, gender and class. Special emphasis is placed upon anthropological methods and approaches to enhance student’s understanding of contemporary socio-cultural variables in peoples’ lives.

**Biological Anthropology**

ANTH& 205 F,S 5 credits

Examines the essential facts of human biological evolution by providing a thorough understanding of the concept of evolution and applying it to the particular details of the evolution of human populations and the fossil record. Attention will also be given to the methodology of contemporary research and its application to the study of primate and human evolution.

**Cultural Anthropology:DIV**

ANTH& 206 W 5 credits

Examines the impact that the concept of culture has upon the anthropological understanding of humanity. Attention will be given to a thorough understanding of the concept of culture as a source of human diversity and its relationship to historical, economic, political, social, linguistic and religious development.

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### Art (ART)

**Art Appreciation:DIV**

ART& 100 F,W,Sp,S 5 credits

Introduces basic art vocabulary and concepts, and provides a basis for understanding and appreciating art from a variety of cultures and time periods through visual presentations, demonstrations, discussion, and field trips. ART& 100 is a transferable course. It fulfills the requirements of the AA-DTA Humanities distribution list.

**Beginning Drawing**

ART 101 F,W,Sp,S 3 credits

Introduces basic drawing techniques with a variety of media. Hands-on experience in the effective use of composition, line, shape, surface quality, and perspective. Intended for the beginning student. Focuses on learning to draw what is actually seen, i.e. drawing from the “right” brain.

**Intermediate Drawing**

ART 102 F,W,Sp,S 3 credits

Continues the skills and concepts from ART 101 and applies them to a broader range of media and subject matter. Part of the term is devoted to introductory figure drawing working from a model.

Prerequisite: ART 101 or instructor permission.
ART 103  F,W,Sp  3 credits
Advanced Drawing  H,P
Expands on the experiences from ART 101 and 102 and adds more in-depth understanding of the materials and concepts in visual communication. This is a project oriented class.
Prerequisite: ART 102 or instructor permission.

ART 106  F,W,Sp,S  5 credits
Basic Design  H,P
Introduces the theory and fundamentals of visual organization through the explanation of black and white media.

ART 107  F,W,Sp,S  5 credits
Basic Design I  H,P
Introduces the theory and application of color to specific two-dimensional and three-dimensional design problems.

ART 108  Sp  3 credits
Basic Design II  H, P
Introduces three-dimensional form and space with emphasis on materials, spatial composition, and fabrication.

ART 111  F,W,Sp,S  3 credits
Beginning Painting  H, P
Introduces the use of oil and acrylic painting media and the study of traditional and contemporary painting concepts and techniques.

ART 112  F,W,Sp,S  3 credits
Intermediate Painting  H, P
Presents more in-depth exploration of painting materials, techniques, and subject matter.
Prerequisite: ART 111 or instructor permission.

ART 113  F,W,Sp,S  3 credits
Advance Painting  H, P
Offers advanced painting theory and practice and the development of individual expression in subject matter and composition.
Prerequisite: ART 112 or instructor permission.

ART 130  W  4 credits
Introduction to Graphic Design  H,P
Provides an overview and introduction to pre-press electronic publishing using pagination software covering page layout design principles, font use, copy fitting and color as they relate to both printed products and web work. Includes file management, copyright and ethical issues related to the publishing industry.
Prerequisite: Basic computing skills using the Windows O/S recommended.

ART 154  S  5 credits
Beginning Analog Film Photography  H,P
Introduces the fundamentals of analog (film) photography in the creation of fine-art black and white prints. Explores the fundamentals of camera and lens operation, exposure, creative controls, and composition to design photographs. Includes the processing of black and white film to make custom photographic prints in a darkroom. The history of photography, including great works of photography that have influenced the field, will be discussed. Students must provide their own analog (film) camera with manually adjustable focus, exposure, aperture, and shutter speed. This is a beginning photography course that serves as an art elective. It fulfills the requirements of the AA-DTA Humanities distribution list. It is designed for students without previous photography or art background, and is one of two entry level courses in a series of photography courses offered.

ART 155  5 credits
Beginning Digital Photography  H,P
Introduces the fundamentals of digital photography in the creation of custom fine-art digital prints. Explores the fundamentals of camera and lens operation, exposure, creative controls, and composition to design digital photographs. Photoshop software tools will be used with digital photographs to edit, correct or enhance the photo. The history of photography, including great works of photography that have influenced the field, will be discussed. Students must provide their own digital camera with manually adjustable focus, exposure, aperture, and shutter speed.

ART 156  3 credits
Intermediate Photography-Studio  H,P
Further explores camera vision and pushes the limit of camera controls to create photographic images with digital or film cameras. Students will explore adjusting ISO/film speeds for advanced exposure control, and will gain more understanding and control over lighting. Focused on studio photography, students will also refine camera and digital lab or darkroom printing skills as they relate to photography. Students also participate in photo critiques.
Prerequisite: ART 154 or 155 or instructor permission.

ART 157  3 credits
Intermediate Photo-Documentary  H,P
Provides both digital and analog students, who have completed ART 151 or 155 the opportunity to further advance their camera, printing, and editing critiquing skills. Learn how to utilize ISO adjustments with both digital and film cameras to maximize, exposure control, and use flash as it relates to different applications on location in order to visually document people and events. Learn how to create effective layouts for series and photo essays. Learn about the ethics and legal aspects related to photography.
Prerequisite: ART 154 or 155 or instructor permission.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites/Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 158</td>
<td>Advanced Photography Digital/Analog</td>
<td>3</td>
<td>H,P Prerequisite: ART 156 or ART 157 or instructor permission.</td>
</tr>
<tr>
<td>ART 162</td>
<td>Photoshop for Web &amp; Print</td>
<td>3</td>
<td>F,W,Sp Basic computer skills required.</td>
</tr>
<tr>
<td>ART 206</td>
<td>Arts of the Americas:DIV</td>
<td>5</td>
<td>H Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 207</td>
<td>Arts of the World:DIV</td>
<td>5</td>
<td>H Prerequisite: ART 241 with a grade of C or better.</td>
</tr>
<tr>
<td>ART 208</td>
<td>Arts of the Pacific Northwest:DIV</td>
<td>5</td>
<td>H,D Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 226</td>
<td>History of Western Art</td>
<td>5</td>
<td>H History of Western Art is an investigation into the development of art from early medieval through Renaissance Europe, approximately 500 CE to 1600 CE. Study includes a critical evaluation of interpretations by artists through their art to address issues of difference, power, power, and discrimination. Art continues to reflect culture and to shape contemporary lives.</td>
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<tr>
<td>ART 227</td>
<td>History of Western Art:DIV</td>
<td>5</td>
<td>H,D History of Western Art is an investigation into the development of art from early medieval through Renaissance Europe, approximately 500 CE to 1600 CE. Study includes a critical evaluation of interpretations by artists through their art to address issues of difference, power, power, and discrimination. Art continues to reflect culture and to shape contemporary lives.</td>
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<tr>
<td>ART 228</td>
<td>History of Western Art</td>
<td>5</td>
<td>H,D Art Lab-Photography Provides lab opportunity in photography for students who have completed ART 153. Students will develop a description/contract of what they would like to focus their study on. Prerequisite: ART 158 or instructor permission.</td>
</tr>
<tr>
<td>ART 241</td>
<td>Beginning Ceramic Art, Pottery</td>
<td>3</td>
<td>F,W,Sp,S Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 242</td>
<td>Intermediate Ceramic Art, Pottery</td>
<td>3</td>
<td>F,W,Sp,S Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 243</td>
<td>Advanced Ceramic Art, Pottery</td>
<td>3</td>
<td>F,W,Sp,S Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 245</td>
<td>Art Studio Lab-Ceramics</td>
<td>1-3</td>
<td>F,W,Sp,S Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 290</td>
<td>Art Studio Lab-Ceramics</td>
<td>1-3</td>
<td>F,W,Sp,S Prerequisite: Instructor permission.</td>
</tr>
<tr>
<td>ART 295</td>
<td>Art Lab-Photography</td>
<td>1-3</td>
<td>F,W,Sp,S Prerequisite: ART 158 or instructor permission.</td>
</tr>
</tbody>
</table>
Astronomy (ASTR)

ASTR& 101 W,Sp 5 credits
Introduction to Astronomy NSL
Provides for student investigation of information gathered on distant objects by telescope, spectrometer, radio, satellites, and other instruments. Students pursue both the knowledge and processes for acquiring knowledge of the moon, sun, planets, comets, and meteors of the solar system, distant stars, nebulae, clusters, and galaxies, and their theoretical evolution.

Automotive Technology (AMTC)

AMTC 100 W 5 credits
Essential of Mechanics
Develops beginning mechanical skills and knowledge essential to successful completion of the automotive and/or diesel technology program. Includes shop safety, fasteners, measurements, cutting tools, lifting, tool usage, shop orientation, manuals (including computer retrieval systems), bearings and seals, and special emphasis on preventative/predictive maintenance. This is an introductory course for beginning students of Automotive or Diesel Technology. Course can be waived if student has completed principles of technology and auto program in high school.

AMTC 101 F 5 credits
Electrical Systems I
Covers the theory of electricity from fundamentals through solid state and electrical safety. Includes solving and proving Ohm’s Law, in series, parallel, and series-parallel circuits. Automotive wiring and circuits are included, as well as how to read wiring diagrams and use them to effectively diagnose an electrical malfunction, circuit tracing and wiring repair techniques.

AMTC 102 F 10 credits
Electrical Systems II
Presents brief review of the theory of electricity. Covers theory, diagnosis and repair of low voltage systems (12V), including batteries, starting systems, charging systems, instrumentation and warning devices, lighting systems, power accessories, (e. g. power windows, power seats), and computer operation and circuit analysis. Also covered are high voltage energy, distributorless, and breaker point ignition systems. Prerequisite: AMTC 101 (was ADT 101) or instructor permission.

AMTC 104 Sp 8 credits
Vehicle Climate Control
Covers the theory of operation, design, diagnosis and repair of both manual and automatic heating, ventilation and air conditioning systems (HVAC) used in automobiles, trucks and heavy equipment. Emphasis is on component identifications, performance testing, recovering, evacuation and recharging. Covers materials necessary to pass ASE (A7) test. Prerequisite: AMTC 102 or instructor permission.

AMTC 111 W 5 credits
Hydraulic Brakes
Covers the theory of hydraulics, fundamentals of manual, power, drum, and disc brake systems. This is a first-year course and may be waived with the instructor permission.

AMTC 112 W 3 credits
Antilock Brakes and Traction Control
Presents brief review of hydraulic brakes giving complete coverage of theory, diagnosis, and how to repair antilock brakes and traction control systems. This will include scan tool diagnosis as well as functional and visual tests. Prerequisite: AMTC 111 (was ADT 111) or instructor permission.

AMTC 121 Sp 5 credits
Gas Engines I
Provides an introductory course for the student with little or no experience with gasoline engines. Covers theory of operation, performance factors, and routine diagnosis and maintenance of spark ignition engines. This is a core course in the AMTC program and the first part of a two-part sequence in gasoline engine repair. Course can be waived with instructor permission based on experience or successful completion of high school automotive program.

AMTC 122 Sp 1-10 credits
Gas Engines II
Covers all facets of the internal gasoline engine. Includes theory of operation, removing, inspecting, cleaning, measuring, machining, reassembling, reinstalling, and testing. The student will completely rebuild a gasoline engine. Prerequisite: AMTC 121 (was ADT 121) or instructor permission.

AMTC 201 W 12 credits
Fuels and Emissions
Covers the theory of operation, design, diagnosis and repair of automotive fuel systems. Includes injection, storage, and delivery systems. Covers materials necessary to pass ASE (AB) certification. Prerequisite: AMTC 102 or instructor permission.

AMTC 202 Sp 12 credits
Automotive Computer Systems
Covers advanced theory, operation, diagnosis and repair of automotive fuel systems. Includes injection, storage, and delivery systems. Covers materials necessary to pass ASE (AB and L1) certification. Prerequisite: AMTC 201 or instructor permission.

AMTC 215 W 8 credits
Suspension and Alignment
Prepares the student to perform all aspects of automotive type suspension and alignment work, including powered and non-powered steering systems, inspection, diagnosis, adjustment, and repair of front and rear suspension systems, and related components such as tires and wheels. Use of four-wheel alignment equipment is an integral part of this course.
AMTC 216 F 8 credits
Automatic Transmission
Studies hydraulic principle of pressure and force multiplication, operation, diagnosis and repair of automotive automatic transmissions and transaxles.

AMTC 217 F 6 credits
Powertrains
Studies the theory of operation, diagnosis and repair of clutches, manual transmission/transaxles, drivelines, drive axles and transfer cases. Covers all of the mechanical components used to transfer power from the engine to the drive wheels - both 2 and 4 wheel drive. Automatic transmissions are not covered in this course.

Biology (BIOL)

BIOL& 100 F,W,Sp 5 credits
Survey of Biology  NSL
Examines major concepts in biology -- The science of life -- and the nature of science itself and includes survey of fundamental life processes by which organisms live, grow, reproduce, and interact with their environment. This course is recommended for students interested in a brief overview of biology. Laboratory is included.

BIOL 109 Sp 5 credits
Energy and Life: Biological Sciences  NSL
Explores energy and life on earth through the study of biodiversity, metabolism, cell structure, genetics, evolution, and ecosystems. Students will gain an understanding of the natural world, science as a field of study, and develop skills to apply and teach scientific principles in everyday life. Intended for elementary education and early childhood education majors. Part of a three quarter sequence; students are not required to take entire sequence. Includes lab.

BIOL 130 Sp 5 credits
Plants of the Pacific Northwest  NSL
Introduces biological diversity of the major ecosystems of the Pacific Northwest (e.g. forest, riparian, wetland, estuary, and marine intertidal). Surveys common organisms of these ecosystems and students will learn fundamental biological principles as they relate to biodiversity (e.g. ecology, evolution, genetics) and the importance to human well-being, as well as the intrinsic value of biodiversity at three levels: genetic, species, and ecosystems. Students will learn methods in the lab and field for surveying, identifying, and measuring biodiversity. Students will complete original research on a group and/or ecosystem of their choice. Class will meet often outdoors and three day-long field trip(s) are required.
Prerequisite: ENGL& 101, MATH 089, or instructor permission.

BIOL 150 W 5 credits
Human Genetics and Society:DIV  NSL,D
Introduces the discipline of human genetics by interweaving classical genetics concepts with current issues in genetics, including genetic diversity, the human genome, biotechnology, and genetic disorders. Presents the tools necessary for making informed decisions regarding the impact of genetic advances on individual lives and society. Laboratory includes exploration of DNA structure, DNA identification, and problem solving using activities, specimens and biotechnology equipment.

BIOL& 160 F,W,Sp,S 5 credits
General Biology w/Lab  NSL
Provides an introduction to cell biology, including the chemistry of life, the structure, reproduction, and metabolism of cells, genetics, and evolutionary biology. Topics are similar to BIOL& 211 but are covered in less depth.

BIOL& 170 5 credits
Human Biology  NS
Introduces students to such fundamental biological principles as the cell and metabolism, then progresses through tissues to human organ systems including respiratory, circulatory, digestive, reproductive, immune and others. Also surveyed are heredity and human ecology.

BIOL& 211 F 5 credits
Majors Biology Cellular  NSL
Covers three major themes in biology: cellular, genetics, and evolution. Cell biology includes cell structure, organization, metabolism, and energetics. Genetics includes gene structure and function, molecular and chromosomal mechanisms of inheritance, and Mendelian and microbial patterns of inheritance. Evolution is a central theme in biology that ties together all other major themes. Laboratory is included.
Prerequisite: CHEM& 161 or CHEM& 121 or instructor permission.

BIOL& 212 W 5 credits
Majors Biology Animal  NSL
Continues this series for science majors emphasizing the biological diversity and evolution of animals and comparing general principles of physiology, growth, development, and behavior across animal groups. Laboratory included.
Prerequisite: BIOL& 211 (was BIOL 201) with 2. 0 or better.

BIOL& 213 Sp 5 credits
Majors Biology Plant  NSL
Continues this series for science majors emphasizing prokaryotes, fungi, algae, and plants including their diversity, anatomy and physiology; includes general evolutionary theory, including population genetics, and ecological principles. Laboratory included.
Prerequisite: BIOL& 212 (was BIOL 202) with 2. 0 or better.
BIOL& 241  F,W,Sp,  6 credits
Human Anatomy and Physiology 1  NSL
Provides a study of structure and function of the human body. Topics include the cell, tissues, skeletal system, articulations, muscular system, and nervous system. This is the first of a two-course sequence. This course may not be transferable unless the entire sequence (BIOL& 241 and 242) is taken at LCC.
Prerequisite: BIOL& 160 or BIOL& 211, with a grade of C or above, or instructor permission.

BIOL& 242  W,Sp,S  6 credits
Human Anatomy and Physiology 2  NSL
Continues the study of structure and function of the human body. Topics include endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems; and fluid and electrolyte balance. This is the second part of a two-course sequence. This course may not be transferable unless the entire sequence (BIOL& 241 and 242) is taken at LCC. Laboratory is included.
Prerequisite: BIOL& 241 with a C- or better, or instructor permission.

BIOL& 260  F,Sp  5 credits
Microbiology  NSL
Introduces the fundamentals of microbiology, including: evolution, microbial structures and functions, metabolism, growth, genetics, classification and pathogenesis; virology; principles of infectious disease; host defenses and antimicrobial drugs. Laboratory includes techniques for isolation, cultivation and identification of microbes.
Prerequisite: BIOL& 160 or BIOL& 211 with a grade of C or better or instructor permission.

Blueprint (BLPT)

BLPT 150  W  5 credits
Machinists Blueprint Reading
Provides basic general information in reading and understanding plans and drawings that will be useful to vocational students. Focusing on line and symbol conventions used in industrial blueprints and visualization of solid objects from orthographic and isometric projections, the course leads to development of required skills for industrial design and problem solving. It also provides comprehensive information needed by persons in the machine trades for reading industrial blueprints and emphasizes specifications of materials, geometrical tolerancing, surface finishes, AWS welding symbols, and related foundry processes.

BLPT 160  Sp  5 credits
Blueprint Reading for Welders
Provides basic general information in reading and understanding plans and drawings that will be useful to students in the welding field, focusing on identifying basic lines, dimensions, structural shapes, welding symbols, and basic joints for welding fabrication and practical layout design.
Prerequisite: MATH 106 or higher or instructor permission.

Business Administration (BUS)

BUS 100  5 credits
Personal Finance
Introduces basic concepts necessary for students to develop skills and gain confidence in the successful management of their financial affairs. Topics include: goal setting, budgeting, controlling debt and expense, saving and investing, determining insurance needs, consumer strategies, and mitigating exposure to tax liabilities.
Prerequisite: MATH 079 or TECH 079 with a grade of C or better or instructor permission.

BUS& 101  F,W,Sp,S  5 credits
Introduction to Business  SS
Surveys the business environment and many important elements of business including marketing, finance, accounting, computers, labor unions, small business management, economics, and the functions of management.

BUS 104  F,W,Sp  5 credits
Business Math Applications
Teaches the use of basic mathematical processes to solve business applications. Topics include percentages, simple interest, compound interest, annuities, markups and markdowns, payroll, trade and cash discounts, banking, and solving problems with equations and formulas.
Prerequisite: MATH 078/079 or TECH 078/079 with a grade of C or better or instructor permission.

BUS 118  W  5 credits
Ethics in Management
Surveys current business ethical issues and concerns and is presented using the case study method. Through interactions, students will gain an understanding of how ethical considerations become a part of business decisions. Emphasis will be placed on advertising, affirmative action, product liability, employee rights, management/supervisory interactions, and corporate morality.

BUS 119  F,W,Sp  5 credits
Business Communications
Emphasizes planning, organizing, and writing clear, concise business letters. Includes a review of grammar, punctuation, and word usage as applied to written business communication; experience in writing favorable messages. Students will present information orally and prepare a job resume and letter of application.
Prerequisite: ENGL 099 (was ENGL 100) or TECH 105 with a grade of C or better or placement test into ENGL& 101.
BUS 144 F,W,Sp,S 5 credits
Management of Human Relations:DIV D
Introduces and emphasizes the many aspects of human behavior as they affect individuals and groups in the workplace. Teaches human relations skills in the context of understanding human needs, attitudes, perceptions and motivations, workforce diversity teamwork, stress management, and interpersonal communications. Focus is on management of human relations factors within an organization and understanding the effects of discrimination, prejudice, and intolerance, in the pluralistic workplace.

BUS 150 F,W,Sp,S 5 credits
Customer Service/Management:DIV D
Introduces the philosophy of “service excellence” as it pertains to organizations in today’s business environment. Emphasis on the effects of globalization, cultural diversity, and workforce diversity in organizations. Topics include developing interpersonal skills, interacting effectively with employees and customers, and establishing positive relationships with employees and customers with regard to their gender and culture. Students will learn to identify the challenges and advantages of a diverse workforce. Meets the Diversity requirement.

BUS 159 F,Sp 5 credits
Principles of Retailing
Surveys retailing principles and concepts and studies store management, merchandise management, pricing, customer services, advertising, and display.

BUS 165 W 5 credits
Salesmanship
Surveys multiple aspects of selling, including the importance of selling and salespeople in business and the rewards of a sales career. Topics include: buying behaviors, the ethical and legal issues in sales, the buying process, the approach, the presentation, demonstration of merchandise, handling of objectives, closing the sale, follow-up and effective sales management.

BUS& 201 F,W,Sp 5 credits
Business Law SS
Introduces the law, sources of law, legal thinking, structure of courts, alternative dispute resolution, basic civil procedure, business organization, government constitutional authority and regulation, agency, employment and criminal law as relating to business, real property and landlord/tenant law, torts, international business law issues and ethics. Includes extensive concentration on contract law including Article 2 of the Uniform Commercial Code.
Prerequisite: ENGL& 101 OR BUS 119, or equivalent, with a grade of C or better, or instructor permission.

BUS 206 F,W,Sp,S 5 credits
Statistical Methods NS
Introduces the student to descriptive statistics, probability and inferential statistical methods. Topics include probability distributions, sampling techniques, measures of central tendency and dispersion, correlation, regression, hypothesis testing and statistical inference. Credit cannot be earned for both BUS 206 and MATH 210.
Prerequisite: MATH 098/099 or TECH 098/099 with a grade of C or better.

BUS 207 3 credits
Statistical Projects NS
Provides an opportunity for students to apply the statistical processes learned in MATH 210/BUS 206 by designing their own statistical project. Topics may include nonparametric statistics, sampling techniques, design of experiments and data analysis. This course, in conjunction with MATH 211 may be offered as a Capstone course.
Prerequisite: MATH 210 or BUS 206 with a grade of C or better or concurrent enrollment in MATH 210 or BUS 206.

BUS 240 F 5 credits
Principles of Supervision
Analyzes basic functions of the supervisory-level management along with emphasis on skills needed to be an effective leader/manager of a diverse workforce. Emphasis will be on the differences between supervisors and upper management.

BUS 244 W 5 credits
Human Resource Management
Introduces the fundamental concepts of Human Resource Management, including hiring skills, long-term planning, employee laws, recruitment, staffing, training, compensation programs (both direct and indirect), collective bargaining, employee relations, safety training, health and EAPs (employee assistance programs).

BUS 245 Sp 5 credits
Principles of Management
Offers the student a history of management and its various theories. Covers the principles and application of planning, organizing, leading and controlling. Students also view management from the roles of supervisory, middle and top management.

BUS 259 F 5 credits
Starting/Managing a Small Business
Surveys the characteristics of small businesses, and includes the study of planning and organizing a new business, starting up a new business, producing products or services, marketing, planning, and control.
Prerequisite: ACCT 101, BUS& 101 and CS 121 with a grade of C- or better, or instructor permission.

BUS 264 W 5 credits
Principles of Marketing
Presents marketing functions and their roles in the economic process, emphasizing marketing systems, product planning, promotion, and sales.
Prerequisite: BUS& 101 (was BSAD 110) or instructor permission.
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<th>COURSE DESCRIPTIONS</th>
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| **BUS 265 Sp 5 credits**  
Advertising  
Provides an overview of the related fields of sales and advertising. The course encompasses economics of selling and selling processes and studies field of advertising with emphasis on planning, implementing, and controlling the advertising process. |
| **BUS 270 5 credits**  
Introduction to Project Management  
Focuses on management principles, methods, and tools to effectively plan and implement complex projects. Includes project scoping, preparation, planning, and monitoring. Covers classical techniques and new methodologies; spreadsheet-based tools; and probabilistic project simulation from strategic, tactical, and operational perspectives. Prerequisite: CS 121 and BUS 144 with a grade of C or better, or instructor permission. |
| **BUS 294 F,W,Sp 2 credits**  
Career Success  
Provides preparation for pursuing a career in business, with a focus on self-assessment, job search, application process documents, and interviewing techniques. This course is intended for Business students in their second year. Students should enroll in this course during one of the last two quarters of their program. Prerequisite: Program advisor permission. |
| **BTEC 100 F,W,Sp,S 1-3 credits**  
Computer Keyboarding  
Introduces keyboarding using the computer and individualized instruction media. Provides instruction and practice on the alphabet, number, and symbol keys, and the 10-key numeric keypad. Graded on a pass/fail basis. |
| **BTEC 104 F,W 5 credits**  
Introduction to Business Technology  
Introduces current business software and technology. Basic computer concepts and navigating within the Windows environment are discussed. Electronic communication, information retrieval, word processing, spreadsheet analysis, graphic presentation, and database management are practiced. |
| **BTEC 105 F,W,Sp,S 1-4 credits**  
Keyboarding Speed/Accuracy Building  
Provides an individualized skill-building program for students who need or want to increase their keyboarding accuracy. Graded on a pass/fail basis. Prerequisite: Passing grade in BTEC 100 or instructor permission. |
| **BTEC 109 F,W,Sp,S 1 credit**  
MS Office Upgrade  
Introduces new concepts of the MS Office Suite. Students will learn through hands-on application in word processing, spreadsheet design, graphic presentation, and database management. Prerequisite: Experience in previous version of MS Office. |
| **BTEC 111 F,W 5 credits**  
Intermediate Word Processing  
Utilizes Microsoft Word features to format, edit, maintain, merge, and reference business documents. Includes creating tables and using SmartArt graphics. Prerequisite: BTEC 104 with a grade of C or better or instructor permission, and a minimum keyboarding speed of 35 wpm or concurrent enrollment in BTEC 105. |
| **BTEC 112 Sp 5 credits**  
Advanced Word Processing  
Presents advanced word processing features using Microsoft Word. Examines creating letters, reports, research papers, brochures, newsletters, and other documents. Introduces customizing, proofing, automation, specialized navigation and referencing, working with shared documents, and document protection and security. Prerequisite: BTEC 111 with a grade of C or better or instructor permission, and a minimum keyboarding speed of 45 wpm or concurrent enrollment in BTEC 105. |
| **BTEC 130 F,W,Sp,S 1-2 credits**  
Electronic Calculators  
Develops speed and accuracy by touch on the ten-key electronic calculator and the computer numeric keypad. Includes using special features of a calculator and applying learned skills to business problems. |
| **BTEC 144 1 credit**  
OneNote Fundamentals  
Introduces the electronic note-taking and information management application, Microsoft OneNote. Topics include using this application to gather, format, organize, and share information. |
| **BTEC 145 1-5 credits**  
Introduction To MS Word  
Introduces students to Microsoft Word features that may be used in both personal and business environments. Topics include basic and intermediate-level document formatting. Prerequisite: BTEC 100 or instructor permission. |
| **BTEC 146 F,W,Sp,S 1 credit**  
PowerPoint Fundamentals  
Introduces presentation graphics, using Microsoft PowerPoint to create electronic slide shows. Students create and edit slide shows, apply templates, format slides, enter text, print presentations, create charts, and employ other graphical functions and features. Includes a basic coverage of design for presentation best practices. |
BTEC 147 F,W,Sp,S 1-3 credits
Introduction to Desktop Publishing
Provides hands-on instruction using Microsoft Publisher. Emphasizes formatting and enhancing text, developing styles, using columns and tables with special effects, and working with art to create professional looking publications. Prerequisite: CS 110 or BTEC 104 with a grade of C or better or instructor permission.

BTEC 148 F,W,Sp 2 credits
Introduction to Outlook
Offers an introduction to using Microsoft Outlook communication and scheduling as a business tool. This course is designed to prepare students with a full understanding of features available in Microsoft Outlook. Topics include email, contacts, schedule management, and instant messaging.

BTEC 149 F,W,Sp,S 1 credit
Internet Fundamentals
Offers an introduction to the Internet, the organizations that manage the Internet, and capabilities of the Internet in today's world. A Web browser is used to access the World Wide Web, to search for information, and to perform other basic Internet functions.

BTEC 150 F,W,Sp,S 5 credits
Introduction To Google Apps
Introduces students to Google Application features that may be used in both personal and business environments. Topics include web-based communication, collaboration, media, and locational tools. This is an elective course and may be suitable for other majors.

BTEC 155 F,W,Sp,S 3 credits
Website Management
Covers the processes involved in identifying client needs, target audience, and content management for website deployment. Students will explore domain name management, ISP relationships, media management, user group management, and integration of evolving technology. Prerequisite: BTEC 104 or CS 110 or BTEC 149 or Instructor Permission.

BTEC 161 F 5 credits
Introduction to ICD-9 Coding in the Medical Office (Part I)
Covers the rules and guidelines utilized in the assignment of ICD-10 codes. Students will select and assign the appropriate codes to diagnoses and procedures performed in both inpatient and outpatient settings, and learn to extract diagnoses from a patient's record. Prerequisite: BTEC 181 and MEDA 120, both with a grade of C or higher or Instructor Permission.

BTEC 162 W 5 credits
Introduction to ICD-9 Coding in the Medical Office (Part II)
Continues to develop and reinforce the rules and guidelines utilized in the assignment of ICD-10 codes. Students will select and assign the appropriate codes to diagnoses and procedures performed in both inpatient and outpatient settings. Prerequisite: BTEC 161 with a grade of C or better or instructor permission.

BTEC 163 Sp 5 credits
CPT CODING
Introduces the rules and guidelines of Current Procedural Terminology (CPT) coding, which are utilized in the reimbursement of outpatient procedures and surgeries. Students learn to use the CPT coding book. Course also introduces the evaluation and management processes used for physician reimbursement and the government regulations regarding CPT coding. Prerequisite: BTEC 162 with grade C or better or instructor permission.

BTEC 164 F,W,Sp,S 1-2 credits
Legal Aspects of the Medical Office
Presents the legal, ethical, and bioethical issues relevant to medical office settings. Course features legal cases and legislation. Topics include patient confidentiality, advance directives, consents, professional liability, medical malpractice, release of information, and the professional code of ethics.

BTEC 165 F,W,Sp,S 2 credits
Cultural Awareness for Healthcare Professionals
Explores the cultural disparities in healthcare. Examines cultural and linguistic differences which limit the access to healthcare or prevent the adoption of health promoting or harm-reducing behaviors. Presents effective cross-cultural communication through the use of relevant languages, respectful attitudes, and cultural knowledge. Provides strategies to apply cultural awareness skills in all aspects of work with clients, families, community members, and colleagues.

BTEC 171 F 3 credits
Medical Reception Procedures
Provides a foundation of basic knowledge and skills for employment in a physician's office or clinic. Topics include reception techniques, medical records and related laws, appointment scheduling, telephone use procedures, and office maintenance. Prerequisite: ENGL 099 or higher.

BTEC 172 W 3 credits
Medical Office Procedures
Provides instruction and practice for advanced administrative support skills in the medical office. Topics include payroll procedures, banking; fees, credit and collections; patient and insurance billing; bookkeeping, including practice in single-entry methods; and diagnostic and procedural coding. Prerequisite: ENGL 099 or TECH 105 or instructor permission, MATH 079 or TECH 079 or instructor permission, and BTEC 171, each with a grade of C or better.
COURSE DESCRIPTIONS

BTEC 173 Sp 3 credits
Computers in the Medical Office
Prepares students for administrative talks in healthcare practices. Using computer software students learn to enter patient information, schedule appointments, and handle billing and insurance claims.
Prerequisite: BTEC 172 with grade C or better.

BTEC 181 F,W,Sp,S 1-3 credits
Medical Terminology I
Provides a foundation for building a medical vocabulary including the study of prefixes, roots, suffixes, combining forms, and pronunciation. Emphasis is on using medical terms accurately in documenting and reporting patient care procedures.

BTEC 182 F,W,Sp,S 1-3 credits
Medical Terminology II
Continues the focus of BTEC 181 incorporating actual medical records and demonstrating how medical terminology is used in the clinical setting.
Prerequisite: BTEC 181 or MEDA 101 each with a grade of C or better.

BTEC 230 F,W,Sp,S 1-3 credits
Legal Terminology
Provides instruction in legal terminology including definitions of terms and correct pronunciation. Emphasis is placed on understanding legal terminology through the study of legal concepts and their application in the federal and state court systems, trial procedures, and translation into layperson language.
Prerequisite: ENGL& 101 or BUS 119 with a grade of C or better or instructor permission.

BTEC 260 Sp 5 credits
Office Procedures
Provides and enhances essential skills for administrative professionals including time management, basic finance, critical thinking, office technology, web tools, communication, teamwork and cultural diversity awareness to prepare for the workplace.
Prerequisite: ENGL& 101 or BUS 119, BUS 104 and BTEC 104 with a grade of C or better, or instructor permission.

BTEC 294 F,W,Sp 2 credits
Career Success
Provides preparation for pursuing a career in business technology, with a focus on self-assessment, job search, application process documents, and interviewing techniques. This course is intended for Business Technology students in their second year. Students should enroll in this course during one of the last two quarters of their program.
Prerequisite: Program advisor permission.

Chemical Dependency Studies (CDS)

CDS 101 F,Sp 5 credits
Intro to Addictions & Chemical Dependency
Introduces the student to the basic theories of drug/alcohol use and abuse. Explores the scope of chemical substance dependency. Topics include socio-cultural aspects of drug usage, patterns and progression, definitions of substance abuse and dependency recovery and prevention. This course is the primary course for students interested in a career counseling the chemically dependent.

CDS 102 W 3 credits
Introduction to Theories and Counseling of Chemically Dependent Clients
Introduces the student to the need for a theoretical base for CD counseling. Students will learn the fundamental concepts of at least three contemporary theories of counseling, and will gain a working knowledge of brief therapy.
Prerequisite: CDS 101 with a grade of C or better.

CDS 105 W 3 credits
Chemically Dependency/Domestic Violence
Provides students with a basic understanding of social problems and legal issues relative to domestic violence and its impact on children and families.

CDS 107 Sp 3 credits
Adolescent Developmental Issues and Chemical Dependency
Examines the special issues and challenges of working with adolescent chemical abuse and dependency. This class will cover the following: adolescent development tasks, assessment process and tools, diagnostic challenges, treatment and recovery considerations, co-occurring disorders and relapse prevention. It will also cover information about family assessment, treatment, and recovery issues.

CDS 108 F 4 credits
Community and School-Based Prevention and Intervention
Presents history of the prevention discipline, including theories and research-based approaches. Presents various models of prevention, such as the risk and protective factor model, developmental asset model and resiliency model. Addresses the Strategic Prevention Framework. Reviews media models for prevention. Presents principles and dynamics of group development. Discusses various types of community and school groups. Presents advocacy methods and grant writing.
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<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CDS 110 Sp</td>
<td>3</td>
<td>Alcoho/Drug Pathophysiology and Pharmacology</td>
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<tr>
<td>CDS 111 Sp</td>
<td>3</td>
<td>Record Keeping and Case Management</td>
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<td>CDS 113 F</td>
<td>3</td>
<td>Treatment Principles and Chemical Dependency</td>
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<td>CDS 114 F</td>
<td>2</td>
<td>Suicide Assessment and Prevention</td>
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<tr>
<td>CDS 121 W</td>
<td>3</td>
<td>Legal and Ethical Issues in Chemical Dependency Studies</td>
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<td>CDS 201 Sp</td>
<td>3</td>
<td>Dynamics of the Family and Chemical Dependency</td>
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<td>CDS 202 F</td>
<td>3</td>
<td>Chemical Dependency Counseling with Diverse Populations</td>
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<tr>
<td>CDS 203 W</td>
<td>3</td>
<td>Relapse Prevention and Intervention</td>
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<td>CDS 215 F</td>
<td>3</td>
<td>Group Counseling: Theories and Application</td>
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<td>CDS 220 Sp</td>
<td>3</td>
<td>Co-Occurring Disorders: Mental Health Disorders in CDs</td>
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<tr>
<td>CDS 240</td>
<td>3</td>
<td>Compulsive Sexual Behaviors</td>
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**CDS 110 Sp**
Alcohol/Drug Pathophysiology and Pharmacology
Reviews the human body with emphasis on the action of alcohol and other frequently abused drugs on each of the systems. Drug classification, prescription and non-prescription, drug interactions, poly-drug abuse, detoxification process, acute and post-acute withdrawal signs and systems will be studied. Fetal effects from substance abuse will be examined.
Prerequisite: CDS 101, 102, and 113 all with a grade of C or better.

**CDS 111 Sp**
Record Keeping and Case Management
Introduces the student to case management and record keeping techniques. Assessment, diagnosis, individual treatment planning, charting, and continuing care planning will be explored. Confidentiality utilization review and staffing techniques will be discussed.
Prerequisite: CDS 101, 102, and 113 all with a grade of C or better.

**CDS 113 F**
Treatment Principles and Chemical Dependency
Presents the principles and processes needed to effectively treat individuals suffering from addiction. Explores the four phases of the developmental treatment model. Discusses goal setting and objectives related to each phase of the individual’s recovery. Presents the basics of motivational interviewing to become a more effective professional.
Prerequisite: Previous completion of or concurrent enrollment in CDS 101

**CDS 114 F**
Suicide Assessment and Prevention

**CDS 121 W**
Legal and Ethical Issues in Chemical Dependency Studies
Explores legal and ethical issues in chemical dependency counseling. Includes topics of ethical decision making, confidentiality and malpractice, as well as maintaining a professional counselor/client relationship. Addresses issues and values involved in counseling clients from different cultures and with diverse needs.

**CDS 202 F**
Chemical Dependency Counseling with Diverse Populations
This course is designed to prepare the chemical dependency counselor for working with individuals and families from diverse populations. The goal of the course is to raise the level of awareness and cultural sensitivity of the chemical dependency counselor. It will challenge the student to examine culturally learned assumptions that shape their interactions with clients. It helps the chemical dependency counselor become more knowledgeable about social structures that cause inequality and its effect on treatment.
Prerequisite: CDS 101, 102, 113, and 121 or instructor permission.

**CDS 203 W**
Relapse Prevention and Intervention
This course is designed to educate the chemical dependency counselor on all aspects of the relapse process. This includes assessment, education, intervention, relapse treatment plans, family involvement, and stress management.
Prerequisite: CDS 101, 102, and 113 or instructor permission.

**CDS 215 F**
Group Counseling: Theories and Application
Provides the student with the theory and the practice of group counseling with chemical dependent clients and their families being studied. Students will gain a working knowledge of group counseling theories. Styles of group decision-making will also be applied. Role playing and modeling techniques will enhance the students’ skills.
Prerequisite: CDS 101 and 113 both with a grade of C or better.

**CDS 220 Sp**
Co-Occurring Disorders: Mental Health Disorders in CDs
Examines the mental/emotional alterations and their impact on the client with chemical dependency. Materials covered include use of the current edition of the Diagnostic and Statistical Manual, as it relates to diagnosis.
Prerequisite: CDS 101, 102, and 113 all with a grade of C or better or instructor permission.

**CDS 240**
Compulsive Sexual Behaviors
Focuses on the assessment, clinical and theoretical clarification, and treatment of a number of forms of compulsive sexual behaviors. A distinction between addictive, compulsive, and impulsive sexual behavior will be presented as well as various theories of the condition’s development. A variety of treatment modalities will be reviewed.
Chemistry (CHEM)

CHEM& 100  F,W,Sp,S  5 credits
Preparatory Chemistry
Introduces the world of chemistry through the exploration of matter and the basic properties related to what our surroundings are composed of. Students will examine laws, formulas, reactions, and structure governing all substances and their interactions. Prepares students for further study in chemistry. No credit is given to those with one year of recent high school chemistry credit.

CHEM& 110  F,W,Sp,S  5 credits
Chemical Concepts w/Lab
Provides an exploration of our universe through the study of atomic structure, interactions between matter and energy, and everyday encounters with chemistry (technology, environment, energy, materials, foods, etc.). This course is primarily for non-science majors planning to transfer. Laboratory is included. Prerequisite: Completion of or concurrent enrollment in MATH 078/079 or TECH 078/079.

CHEM& 121  F,W,Sp,S  5 credits
Intro to Chemistry
Provides an exploration of the matter that makes up our universe through the study of atomic structure, gases, solutions, acids and bases, stoichiometry, and reactions. This course is primarily for non-science majors preparing for careers in the health sciences and related fields. Laboratory is included. Prerequisite: CHEM& 100 or CHEM& 110 or one year of high school chemistry, completion of, or concurrent enrollment in MATH 088 or TECH 088 or instructor permission.

CHEM& 131  Sp  5 credits
Intro to Organic/Biochem
Explores the chemistry of carbon compounds including structures, nomenclature, and properties of basic organic compounds with an emphasis on biochemical substances and applications. Includes families of alkanes, alkenes, alcohols, ethers, aldehydes, ketones, acids, proteins, carbohydrates, and other biochemical materials. This course is primarily for non-science majors preparing for careers in the health sciences and related fields. Laboratory is included. Prerequisite: CHEM& 121 or CHEM& 161.

CHEM& 161  F  5 credits
General Chem w/Lab I
Provides an in-depth study of chemistry formulas and equations, mathematics, gas laws, atomic theory, solution chemistry, periodic law, electron configurations, the mole concept and stoichiometry. This is the first of a three-quarter sequence designed for science majors. Laboratory is included. Prerequisite: CHEM& 100 or high school chemistry and MATH 099 or TECH 099.

CHEM& 162  W  5 credits
General Chem w/Lab II
Provides the applications portion of the year-long study of chemistry. This course examines bonding and molecular theory, intermolecular forces, solids, liquids, and gases, solutions, acids, bases, salts, pH, kinetics, equilibrium, electrochemistry, and an introduction to thermodynamics. This is the second in a three-quarter sequence designed for science majors. Laboratory is included. Prerequisite: CHEM& 161 AND MATH 099 or TECH 099.

CHEM& 163  Sp  5 credits
General Chem w/Lab III
Explores the chemistry of organic compounds including structures, nomenclature, bonding, and properties of basic organic compounds. The course covers the families of alkanes, alkenes, and alkynes, and discusses functional groups and stereochemistry and their roles in chemical properties. This is the second in a three-quarter sequence designed for science majors in chemistry-related fields. Laboratory is included. Prerequisite: CHEM& 162 AND MATH 099 or TECH 099.

CHEM 231  Sp  5 credits
Quantitative Analysis
Provides a study of the qualitative and quantitative analytical applications of chemistry including the mathematical treatment of data collected. It will examine gravimetric and volumetric wet chemical analysis, instrumental analysis of both organic and inorganic substances will be done. This is a one-quarter course required for students who are chemistry and chemical engineering majors. Prerequisite: Completion of or concurrent enrollment in CHEM& 163.

CHEM& 261  F  5 credits
Organic Chem w/Lab I
Explores the chemistry of organic compounds including structures, nomenclature, bonding, and properties of basic organic compounds. The course covers the families of alkanes, alkenes, and alkynes, and discusses functional groups and stereochemistry and their roles in chemical properties. This is the first in a three-quarter sequence designed for science majors in chemistry-related fields. Laboratory is included. Prerequisite: CHEM& 163 or instructor permission.

CHEM& 262  W  5 credits
Organic Chem w/Lab II
Continues the exploration of the chemistry of organic compounds including structures, nomenclature, and synthesis of basic organic compounds. The course covers the families of alkyl halides, alcohols, aldehydes, ketones, and other groups of compounds. Reactions and synthesis of various compounds of these families will be studies and performed. Products of the processes will be examined using physical and spectroscopic means. This is the second in a three-quarter sequence designed for science majors in chemistry-related fields. Laboratory is included. Prerequisite: CHEM& 261 (was CHEM 251).
CHEM& 263 Sp 5 credits
Organic Chem w/Lab III NSL
Continues the exploration of the chemistry of organic compounds including structures, nomenclature, and synthesis of basic organic compounds. The course covers the families of amines, carbonyls, aromatics, biochemical compounds and other groups of compounds. Reactions and synthesis of various compounds will be studied and performed. Products of these processes will be examined using physical and spectroscopic means. The course includes a qualitative analysis of organic compounds. This is the third of a three-quarter sequence designed for science majors in chemistry-related fields. Laboratory is included. Prerequisite: CHEM& 262.

Chinese (CHIN)

CHIN& 121 F 5 credits Chinese I:DIV H
Introduces Mandarin language and Chinese culture. Emphasizes listening, pronunciation, basic vocabulary and fundamentals of grammar. Introduces Chinese characters. Explores Chinese culture, including social interaction, family relationships, artistic expression, and values.

CHIN& 122 W 5 credits Chinese II:DIV H
Continues the study of the Mandarin language and Chinese culture, building on the basic language skills. Enhances abilities with pronunciation, grammar and vocabulary. Further explores Chinese culture, including proverb and folk stories. Expands on recognition and writing of Chinese characters.

CHIN& 123 Sp 5 credits Chinese III:DIV H
Continues the study of the Mandarin language and Chinese culture, expanding on previous knowledge to develop beginning fluency in understanding, speaking, reading, and writing Mandarin. Further explores Chinese culture and regional identities.

College Success (COLL)

COLL 093 F,W,Sp,S 1 credit
Test Taking
Offers strategies to help students improve test-taking abilities such as scheduling time, preparing for exams, finding exam cues, writing essay responses, and answering objective questions.

COLL 094 F,W,Sp,S 1 credit
Note Taking
Prepares students to effectively take lecture notes. Techniques include active listening, looking for main ideas, using signal words, and organizing notes.

COLL 095 F,W,Sp,S 1 credit
Time Management
Offers strategies to help students organize time effectively, improve the study environment, prioritize goals, control procrastination, and use support resources as needed.

COLL 096 F,W,Sp,S 1 credit
Textbook Reading Techniques
Provides techniques that improve ability to read and comprehend college textbooks. Skills include pre-reading, skimming, scanning, marking, highlighting, and annotating.

COLL 100 F,W,Sp,S 5 credits
College Success
Emphasizes development of necessary skills for successful completion of college courses. Provides techniques and strategies to improve time management, memory, lecture note taking, textbook reading, outlining, learning styles, use of library, test preparation, and test taking. Focuses on how individuals become independent learners and critical thinkers. Empowers students to apply learning strategies in all other content classes. Prerequisite: Reading and writing skills at or above ENGL 075.

COLL 101 F,W,Sp,S 2 credits
First Year Seminar I
Explores foundational issues for success in college including an introduction to campus resources and college culture. Students will develop behaviors and attitudes characteristic of successful students; develop basic reading, study, and test-taking strategies; and create a plan for success during the next quarter and beyond. Prerequisite: COLL 101.

COLL 102 F,W,Sp,S 2 credits
First Year Seminar II
Continues the exploration of foundational issues for success in college including an introduction to campus resources and college culture. Students will continue to develop behaviors and attitudes characteristic of successful students; continue to develop and evaluate basic reading, study, and test-taking strategies; and create a plan for success during the next quarter and beyond. Prerequisite: COLL 102.

COLL 103 F,W,Sp,S 2 credits
First Year Seminar III
Continues the exploration of foundational issues for success in college with an emphasis on critical thinking strategies. Students will continue to develop behaviors and attitudes characteristic of successful students; continue to develop and evaluate basic reading, study, and test-taking strategies; and create a plan for success during the next quarter and beyond. Prerequisite: COLL 102.

COLL 104 F,W,Sp,S 1 credit
College Knowledge
Prepares students to transition from Basic Skills, Career Education Options, or Developmental Education courses to college level courses or employment by providing students with tools to create a plan for success.
COLL 105  F,W,Sp,S  5 credits
Career Plan/Exploration
Launches students into an investigation of interests, values, and careers, followed by decision-making and goal setting.

Computer Science (CS)

CS 100  F,W,Sp,S  5 credits
Introduction to Information Systems
Presents a general overview of information technology. Introduces the student to the complex array of components that make up an information system. The technology and human issues involved in developing a successful information system as well as career paths and ethical issues facing these professionals will be covered.

CS 102  F,W  5 credits
Introduction to Internet Theory, Application, and Web Page Design
Offers concepts, fundamentals, and techniques of web page design, and introduction to Internet networking principles. Topics include web page usability, design principles and development, site planning, and implementation. (X)HTML scripting language and Cascading Style Sheets are used to create structural and presentational web pages. Students will use concepts presented in the course for development of personal and commercial web pages.
Prerequisite: CS 100 with a grade of C or better, or instructor permission.

CS 104  S  5 credits
Intermediate Web Page Design
Continuation of Web Page Design using client and server side scripted/programming languages and dynamic page coding to extend design capabilities and Web Site effectiveness. Methods introduced include browser control, security related issues, and Web Page structural/presentational control using these languages. (Formerly known as CIS 104)
Prerequisite: CS 102, CS 170 or equivalent, or instructor permission.

CS 110  F,W,Sp,S  3 credits
Introduction to Microcomputer Applications
Introduces the student to microcomputers and software applications. Windows, word processing, and electronic spreadsheets basics are presented.
Prerequisite: Ability to use a keyboard.

CS 111  F,W,Sp  4 credits
Intro to Windows
Offers an introduction to the study of the Microsoft Windows operating systems. Presents fundamental concepts of a Microsoft Windows client operating system such as file management and customizing a graphical user interface (GUI).

CS 121  F,W,Sp  5 credits
Introduction to Spreadsheets
Introduces the use of spreadsheet programs in business applications. Provides practical experience in using a spreadsheet to solve common business problems.
Prerequisite: BTEC 104 or CS 110, and MATH 089 or TECH 089 or BUS 104, or instructor permission.

CS 122  5 credits
Advanced Spreadsheet Applications
Introduces advanced spreadsheet topics. Explores complex features such as macros, data management, and advanced formulas and functions to solve business problems. Demonstrates spreadsheets as business analytics and statistical analysis tools.
Prerequisite: CS 121 with a grade of C or better, or instructor permission.

CS 130  F,W,Sp  5 credits
Introductory Database Applications
Offers an introduction to the study and use of computerized database management systems. This course provides basic database theory and application in a disciplined approach to problem solving in a business environment.
Prerequisite: CS 121 with a grade of C or better, or instructor permission.

CS 141  F,W  5 credits
PC Technician I
Provides an overview of the roles of the PC technician. Prepares students for PCPro and CompTIA A+ certification exams. The roles of a PC Technician including protection and safety of users, acting in a professional manner, communication and documentation are examined. Technical topics covered include installation, maintenance and troubleshooting of system components, peripheral devices, storage, printers, and networking.
Prerequisite: CS 100 with a C or better, or concurrent enrollment with CS 100, or instructor permission. Concurrent requirements: MATH 078/079 or instructor permission.

CS 142  5 credits
PC Technician II
Continues student’s preparation for the PC Pro and the A+ certification exams. Topics include installation, maintenance and troubleshooting mobile devices, Microsoft Windows system management and installation, security and troubleshooting stand-alone and networked systems.
Prerequisite: CS 141 and MATH 078/079 with a C or better or instructor permission. Concurrent requirement: MATH 088/089 or instructor permission.

CS 143  Sp  5 credits
Configuring Windows Operating Systems
Prepares students for Microsoft’s Certification: Configuring Windows operating system. It focuses on installing, deploying, configuring, monitoring, and maintaining systems that run Microsoft Windows OS. Installation, system images, application, networking, resource allocation, mobile computing, monitoring, maintenance, backup and recovery topics are included.
Prerequisite: CS 142 with a C or better, or concurrent enrollment with CS 142, or instructor permission.
CS 170 F,W,Sp 5 credits
Fundamentals of Computer Programming NS
Offers an introduction to computer programming concepts and the development of applications. Program development, style, testing, and documentation are presented, discussed and applied using the C++ programming language. This course is a beginning course for CS majors and others, such as engineering transfer students, wishing an introduction to structured computer programming.
Prerequisite: MATH 089 or TECH 089 with a grade of C or better, and knowledge of Windows is required; or instructor permission.

CS 175 Sp 5 credits
Event-Driven Programming
Offers an introduction to designing and implementing Windows applications using Visual Basic. Concepts involving event-driven programming, graphical user interface design, and algorithm implementation are covered.
Prerequisite: CS 170 with a grade of C or better, or instructor permission.

CS 208 W 5 credits
Introduction to Management Information Systems
Introduction to the principles, roles, and application of Management Information Systems (MIS) in business. Investigations into MIS include hands-on lab experiences and case studies.
Prerequisite: BUS& 101, ENGL& 101, or instructor permission. CS 110 recommended.

CS 211 F 5 credits
Networking Basics
Prepares students for Test Out’s Network Pro and CompTIA’s Network+ certification exams. Focuses on configuring, managing and troubleshooting the elements of a basic network infrastructure. Emphasis is on network fundamentals including design, hardware, software and security.
Prerequisite: CS 141 with a grade of C or better or instructor permission.

CS 212 W 5 credits
Local Area Networks: Theory and Application
Prepares students for Microsoft’s Configuring Windows Server active Directory Exam. Focuses on configuring, managing and troubleshooting the computing environment of medium to large companies.
Prerequisite: CS 211 with a grade of C or better or instructor permission.

CS 213 Sp 5 credits
Local Area Networks: Theory and Application
Prepares students for the Microsoft Technology Specialist exam: Windows Server Network Infrastructure Configuring. Focuses on the details of configuring the infrastructure of a network.
Prerequisite: CS 212 with a grade of C or better or instructor permission.

CS 230 F 5 credits
Database Development
Offers further study and use of computerized database management systems. Provides intermediate theory and practice in a disciplined approach to problem solving using a database management system in a business environment.
Prerequisite: CS 130 with a grade of C or better or instructor permission.

CS 249 W 5 credits
Linux Operating Systems
Prepares students for application of Linux+ certification knowledge and skills. Course is focused on meeting Comptia Linux+ certification objectives in both knowledge and hands on lab practice. It is recommended that most students will need some experience with Linux in the workplace prior to attempting the Linux+ exam.
Prerequisite: CS 143 and CS 211 each with a grade of C or better, or instructor permission.

CS 250 W 4 credits
Digital Forensics & Law
Covers legal topics related to the process of digital forensics including case law, legal/administrative procedure, and forensic protocols. Students will study topics through case examples, readings, and guest speakers. This course is for students who are CS majors, Business and Law Enforcement personnel.
Prerequisite: Instructor permission.

CS 251 Sp 5 credits
Digital Forensics Incident
Introduces students to the basic procedures and methods used in digital forensics to properly capture digital content from digital devices and complete a preliminary analysis of data. This is a hands-on course focused on following sound forensic procedures and methods.
Prerequisite: CS 250.

CS 252 S 5 credits
Collect/Exam Digital Evidence
Continues collection and examination of evidence and preparation of are port of findings through a full digital forensics situation. Topics include finding data, encryption and passwords, log and history analysis, event and registry methods, metadata, and handling virus and malware in case analysis.
Prerequisite: CS 251 AND CS 142 or instructor permission.

CS 253 F 4 credits
Digital Forensics Live & Mobile
Covers digital forensics skills, procedures, and methods used in acquiring potential digital evidence in live network and computer environments. Students will also investigate and apply skills to a variety of mobile digital devices encountered by the digital forensics analyst.
Prerequisite: CS 252 AND CS 142 or instructor permission.
Degrees/Certificates

CS 260  Sp  5 credits
Info Tech Security
Prepares students for application of Security+ certification knowledge and skills. Course is focused on meeting Comptia Security+ certification objectives in both knowledge and hands on lab practice. It is recommended that most students will need some experience with Linux in the work place prior to attempting the Security+ exam. Completion of this course does not guarantee passing the certification exam. Prerequisite: CS 211 with a grade of C or better, or instructor permission.

CS 270  F  5 credits
Data Structures I
Offers a detailed study of structured and object-oriented programming, including algorithms, searching and sorting, and data structures using the programming language C++. Prerequisite: MATH 099 or TECH 099 and CS 170, both with a grade of C or better, or instructor permission.

CS 275  W  5 credits
Object-Oriented Programming in Java
Offers an introduction to the object-oriented programming paradigm using Java. Various object-oriented programming concepts will be discussed. Object-oriented programs will be developed and implemented. Prerequisite: CS 170 with a grade of C or better, or instructor permission.

CS 280  Sp  5 credits
Advanced Data Structures
Offers a detailed study of advanced data structures, including the analysis of algorithms and object-oriented programming using the programming language C++. Prerequisite: CS 270 and MATH& 141 (was MATH 112) both with a grade of C or better, or instructor permission.

CS 281  S  5 credits
Digital Design/Comp Org
Introduces elementary digital logic design and the organization of computers. Prerequisite: MATH& 141 (was MATH 112) and CS 270, both with a grade of C or better, or instructor permission.

CS 282  W  5 credits
Assy Lang Prog
Introduces protected-mode assembly language programming. Covers assembly language concepts and code in the context of either “C” or C++.
Prerequisite: CS 281 with a grade of C or better, or instructor permission.

CS 285  S  5 credits
Programming Tools
Covers tools and techniques which facilitate programming and debugging, including debuggers, profilers, scripting, and C and C++ programming under the Linux operating system. Prerequisite: CS 270 with a grade of C or better, or instructor permission.

Criminal Justice (CJ)

CJ 100  15 credits
Basic Law Enforcement
Addresses criminal law, evidence, administration of justice, investigation, patrol, traffic, and juvenile procedures. This 16-week course, containing 450 hours of instruction, is designed to meet the standards of the Washington Law Enforcement Officers Training Commission basic school for newly employed officers. This course is open only to active law enforcement officers.

CJ& 101  F  5 credits
Introduction to Criminal Justice  SS
Introduces and provides an overview of the various agencies involved in the administration of criminal justice, including local, state, and federal agencies as well as a history of police and corrections. Students will study how our criminal justice system evolved and how it functions, examined from the perspective of the Constitution through the criminalization process of investigation, arrest, trial, and post-trial procedures.

CJ& 110  F  5 credits
Criminal Law
Focuses on an explanation of criminal law principles including a discussion on crimes against person and property.

CJ 154  W  5 credits
The American Legal System
Introduces students to the philosophy of our legal system as well as how the various actors within the system interrelate.

CJ 181  W  3 credits
Report Writing for Law Enforcement
Prepares students interested in law enforcement to write effective and concise police reports. Strong emphasis is placed on observation, note taking, and narrative skills.

CJ 183  W  5 credits
Administration of Justice
Studies criminal justice in the State of Washington, including analysis of the laws of arrest, search and seizure, grand jury proceedings, extraditing, pretrial procedures, conduct of criminal trials, rights of the accused, motions, appeals, probation, and parole. The course includes organization and jurisdiction of the Federal Court System and a study of U. S. Supreme Court decisions affecting law enforcement.

CJ 185  5 credits
Community Policing
Covers the evolution of community policing. It will address the need to understand and involve the community; communicating with diverse populations; building partnerships with the media and bringing youths into community policing. The course will focus on community policing, gangs, and preventing violence.
**COURSE DESCRIPTIONS**

**DANCE 100  F,W  2 credits**

**Introduction to Dance**  
H,P

Students will study concepts and practice the fundamentals of ballet, modern, and jazz dance. Students will participate in some physical exercise including a full body warm-up to begin class. Prior dance experience is not necessary. Students will learn short dance combinations involving body awareness, mental and physical discipline, balance, bodytoning, strength and flexibility as well as rhythmic awareness.

**DANCE 105  Sp  2 credits**

**Introduction to Jazz Dance**  
H,P

Studies the concepts relevant to movement and practices the fundamentals of jazz dance. Students will learn short jazz dance combinations involving body awareness, mental and physical discipline, balance, bodytoning, strength, flexibility, and rhythmic awareness. Prior dance experience is not necessary.

**DANCE 110  2 credits**

**Introduction to Tap Dance**  
H, P

Introduces fundamentals of tap dance. Students will learn short dance combinations involving body awareness, mental and physical discipline, balance, strength and rhythmic awareness. Students will participate in physical exercise while dancing. Classes incorporate a full body warm-up including stretching, balance, and leg strengthening exercises providing a moderate cardio exercise. Prior dance experience is not necessary.

**DANCE 115  F  1.5 credits**

**Show Dance I**  
H,P

Covers the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course is designed for Music Majors, Dance Majors and Theatre Majors planning to transfer and complete a four-year degree in music, dance or theatre; or for those students desiring to participate in a song and dance performance choir.

Prerequisite: There are no prequisites for this course; students can step into the sequence at any time. Instructor permission required.

**DANCE 151  F  1.5 credits**

**Show Dance II**  
H,P

Demonstrates the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course is designed for Music Majors, Dance Majors and Theatre Majors planning to transfer and complete a four-year degree in music, dance or theatre; or for those students desiring to participate in a song and dance performance choir.

Prerequisite: There are no prequisites for this course; students can step into the sequence at any time. Instructor permission required.

**DANCE 152  W  1.5 credits**

**Show Dance III**  
H,P

Explores the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit.

Prerequisite: There are no prequisites for this course; students can step into the sequence at any time. Instructor permission required.

**DANCE 153  Sp  1.5 credits**

**Show Dance IV**  
H,P

Provides experience for students who participate in dance performances and performing arts productions not associated with current enrollment in a dance course. This includes dancers, choreographers, designers, technicians, and support personnel. Students must successfully complete the rehearsal process through the final performance.

Prerequisite: Instructor permission.


### Diesel & Heavy Equipment Technology (DHET)

**DHET 100 F 5 credits**

**Essentials of Mechanics**

Develops beginning mechanical skills and knowledge essential to successful completion of the automotive and/or diesel technology program. Includes shop safety, fasteners, measurements, cutting tools, lifting, tool usage, shop orientation, manuals (including computer retrieval systems), bearings and seals, and special emphasis on preventative/predictive maintenance. This is an introductory course for beginning students of Automotive or Diesel Technology. Course can be waived if student has completed principles of technology and auto program in high school.

**DHET 101 W 5 credits**

**Electrical Systems I**

Covers the theory of electricity from fundamentals through solid state. Includes Ohm’s Law, series, parallel, and series-parallel circuits. Automotive wiring and circuits will be included as well as how to read wiring diagrams and circuit tracing and repair. Course can be waived if student has completed principles of technology and auto program in high school.

**DHET 102 W 10 credits**

**Electrical Systems II**

Presents brief review of the theory of electricity. Covers theory, diagnosis and repair of low voltage systems (12V), including batteries, starting systems, charging systems, instrumentation and warning devices, lighting systems, power accessories, (e.g. power windows, power seats), and computer operation and circuit analysis. Also covered are high voltage energy, distributorless, and breaker point ignition systems.

Prerequisite: DHET 101 or instructor permission.

**DHET 104 Sp 8 credits**

**Vehicle Climate Control**

Covers the theory of operation, design, diagnosis and repair of both manual and automatic heating, ventilation and air conditioning systems (HVAC) used in automobiles, trucks and heavy equipment. Emphasis is on component identifications, performance testing, recovering, evacuation and recharging. Covers materials necessary to pass ASE (A7) test.

Prerequisite: DHET 102 or instructor permission.

**DHET 111 Sp 5 credits**

**Hydraulic Brakes**

Covers the theory of hydraulics, fundamentals of manual, power, drum, and disc brake systems. This is a first-year course and may be waived with the instructor permission.

**DHET 115 Sp 5 credits**

**Air Brake System**

Offers training on vehicle air brake systems with coverage of compressors, valves and brake foundation. Emphasis will be placed on maintaining Federal Motor Vehicle Safety Standards.

**DHET 125 Sp 5 credits**

**Heavy Duty Chassis Maintenance**

Offers training in the repair, maintenance, and diagnosis of heavy equipment frames, steering, suspension, wheels, tires and undercarriage.

**DHET 141 F 4 credits**

**Hydraulics I**

Studies the basic principles, operation, maintenance and design of mobile hydraulic systems.
DHET 142  F  6 credits
Hydraulics II
Provides a more in-depth look at hydraulic pumps, valves, and actuators in mobile hydraulic systems. Emphasizes testing, diagnosis and the repair of hydraulic systems. Prerequisite: DHET 141 or MFG 140 or concurrent enrollment.

DHET 210  W  16 credits
Diesel Engine Rebuild
Studies the operation, maintenance, repair, and overhaul of diesel engines used in heavy equipment. Required course for all Diesel/Heavy Equipment Technology majors. Prerequisite: DHET 100.

DHET 215  F  15 credits
Heavy Duty Engine Performance
Studies factors and components that affect diesel engine performance, fuel economy, and exhaust emissions. Includes fuel system and valve train problem diagnosis, maintenance, repair, and adjustment. Prerequisite: DHET 102 or instructor permission.

DHET 216  F  5 credits
Auto/Diesel Tune Up and Performance
Provides a study of the diesel fuel systems and electronic engine controls found in modern high speed diesel engines. This course will introduce students to the theory of fuel system operation, troubleshooting and the servicing of modern high speed diesel engines found in light and medium duty vehicles, cars and boats. Prerequisite: DHET 102 or instructor approval.

DHET 220  Sp  10 credits
Heavy Duty Power Trains
Provides study of the principles of operation, maintenance, problem diagnosis, and repair of clutch systems, manual transmission, automatic transmission, power take-off, transfer cases, drive lines, differential assemblies and final drives used in trucks and heavy equipment.

DHET 228  2 credits
Truck Driving for Technicians
Prepares second-year Diesel students to pass Washington State CDL tests (written and driving) using a combination of classroom and driving time. This class is not intended to prepare students for a career in truck driving. Rather, it prepares diesel technology students to test drive and relocate commercial vehicles. Prerequisite: DHET 102, 141, and 142, or instructor permission.

DHET 230  Sp  5 credits
Advanced Shop Practices
Provides a review of key skills learned in previous diesel program courses and reinforce industry shop practices. Emphasis will be placed on time management and documentation. A course for Diesel AAS students. Prerequisite: Completion of 60 DHET credits.

Drafting (DRFT)

DRFT 107  F,W,Sp  1-3 credits
Technical Graphics
Involves students in the use of techniques and standard practices of technical graphics so that design ideas can be adequately communicated and produced. Includes free-hand sketching, use of drafting instruments, line work, lettering, orthogonal projections, pictorials, basic dimensioning, and an introduction to computer-aided design drafting.

DRFT 132  3 credits
Advanced 3-D Comp Design

DRFT 151  F,W,SpS  1-3 credits
Introduction to Computer-Aided Drafting (CAD)
Introduces drafting operations as applied to computer aided drafting (CAD) and the commands and procedures used to create, edit, and plot two-dimensional CAD drawings. Drawing productivity, accuracy, and organizational techniques are emphasized in this course. Assignments will be chosen from various drafting disciplines. Prerequisite: CS 110 or instructor permission.

DRFT 153  3 credits
Concepts In 3-D Design

DRFT 155  1 credit
CAD Management

DRFT 210  F,W,Sp  1-3 credits
Advanced Technical Graphics
Involves students in the use of techniques and standard practices of technical graphics towards the solution of technical design problems, and to communicate and produce design ideas. Includes dimensioning and tolerancing, production of working drawings, and advanced computer-aided design drawing. This course also introduces students to electronic, piping, and welding drawings. Prerequisite: DRFT 107 or ENGR& 121.

DRFT 252  F,W,Sp  3 credits
3-D Computer Aided Drafting
Involves students in the use of parametric solid modeling towards design on three-dimensional part and assembly models. Includes creating part and assembly drawings from 3D models, modifications throughout the design process, and comparing the many parametric solid modeling software packages available. Prerequisite: DRFT 210.

DRFT 260  F,W,Sp  3 credits
Survey of Civil and Architectural Graphics
A survey course that introduces the student in the use of the drafting standards used by Civil and Architectural disciplines. The concepts of these standards will include: structural graphics, map drafting, architectural drafting, and welding and piping drafting. Prerequisite: DRFT 107 or ENGR& 121 or instructor permission.
Drama (DRMA)

DRMA& 101  F,W,Sp  5 credits
Introduction to Theatre:DIV  H,P
Covers the development of theatre in western society from the ancient Greece up to today. The various areas of theatre required to produce a play are studied: set, light and costume design; various approaches to acting including working in small groups to understand the complexity of theatre in society today. Students read, write directed entries and seminar on plays from various playwrights to show how plays connect to the times in which they were written and how plays reflect upon and shape community values. The Center Stage production for the quarter focuses on a single play using acting, directing, designing, producing and its historical and social context to illustrate the complex nature of taking a play from the printed page to the stage.

DRMA 106, 107, 108 F,W,Sp,S  5 credits
Introduction to Acting I, II, III  H, P
A beginning acting course involving movement, voice production, improvisation, and scene work. Group work is used to allow each student to be comfortable in interactions with other people. Students are not required to be in the current Center Stage production. No prior acting is required.

DRMA 116, 117, 118 F,W,Sp,S  5 credits
Stage Crafts I, II, III
Teaches technical areas involved in producing a play through lecture and application of skills learned in selected technical areas from design to construction to production. Practical experience is gained in sets, costumes, lights, and by serving on stage crew for the current Center Stage production.

DRMA 119  5 credits
Introduction to Theatre Design and Technology
Introduces set, costume and light design, using the current production as the basis for exploring technology in the theatre. Current theatre practices using computer programs for each discipline in both analog and digital format are applied. Included are computer assisted set, and light and sound production in both analog and digital formats. Computer programs include Vector works, Adobe Soundbooth, Sketch Up Pro, and Show Cue System. Practical experience is gained through application of principles learned by using theatre facilities of Center Stage and the Wollenberg Concert Hall and by serving on stage crew for the current Center Stage production.

DRMA 147  F,W,Sp,S  2 credits
Audition Techniques
Introduces audition techniques through preparation, performance and workshops of monologues and musical theatre repertoire. Focuses on interpretation, stage presence, performance etiquette and repertoire selection. Additionally, this course will cultivate successful audition techniques and create a market audition package including, headshot, resume, and portfolio.

DRMA 196, 197, 198, 296, 297, 298  F,W,Sp,S  1-5 credits
Rehearsal and Performance I, II, III, IV, V, VI
Credit and experience for students who participate in the Center Stage production for the quarter. This includes actors, directors, designers, technicians, and support personnel. Students must successfully complete the rehearsal process through the final performance.

DRMA 206, 207, 208 F,W,Sp  5 credits
Acting I, II, III
Emphasizes development and application of acting concepts used in creating a role. Includes voice, physical movement, audition techniques, styles and periods of acting. Designed for the advanced acting student. Students are not required to be in the current Center Stage production.

DRMA 210  5 credits
Masks
Introduces masks as a component of actor training for use on the stage and for understanding various cultures throughout the world. The mask helps develop the ability to concentrate, diminish self-consciousness, center the body, expand the body awareness, and develop outward expressions through physicalization, improvisation and scene work.

Early Childhood Education (ECED)

ECED 079  1 credit
Math Methodology for Educators I
This methodology course strengthens student understanding of arithmetic of pre-algebra concepts including operations on signed numbers, operations on fractions, operations on decimals, ratio and proportions, exponents, measurement, and geometry to prepare the student to teach math standards to children age birth through age 8. Concurrent enrollment in MATH 079 required.

ECED 089  1 credit
Math Methodology for Educators II
This methodology course strengthens student understanding of arithmetic of basic algebra skills including properties of real numbers, solving equations and inequalities, graphing, and factoring to prepare student to teach math standards to children age birth through age 8. Concurrent enrollment in MATH 089 required. Prerequisite: MATH 079 with a grade of C or better.

ECED 099  1 credit
Math Methodology for Educators III
This methodology course strengthens student understanding of arithmetic of concepts covered in Elementary Algebra in greater depth to prepare students to teach math standards to children age birth through age 8. Concurrent enrollment in MATH 099 required. Prerequisite: MATH 089 with a grade of C or better.
ECED& 100  3 credits
Cloud Care Basics
Provides thirty-hours of coursework/training that meets the
Washington State Training and Registry System (STARS)
essential foundations for childcare. Upon completion,
students will be guided through the Registry system.
Designed to meet basic training outcomes for personnel in
Early Childhood and School-age center as mandated by the
Washington State Legislature and outlined by Washington
State Training and Registry System (STARS).

ECED& 105  5 credits
Intro Early Childhood Ed
Provides an overview of the foundations of early childhood
education. Examines theories defining the field, issues
and trends, best practices, and program models. Provides
observation of children, professionals, and programs in
action.

ECED& 107  5 credits
Health Safety and Nutrition
Develops knowledge and skills to ensure good health,
nutrition, and safety of children in a group care and
education program. Recognizes the signs of abuse and
neglect, responsibilities for mandated reporting, and
available community resources.

ECED 116  1 credit
Building Bridges: Guiding Behavior of Young
Children
Focuses on strengthening relationship-based care as an
essential component of positive guidance. Participants will
identify their own personal view or ‘image’ of the child and
correlates this image with beliefs about guidance. Strategies
to encourage caregivers to bond with children in their care
will be introduced.

ECED 117  1 credit
Building Bridges: The Encouraging Classroom
Focuses on using the environment to support children’s
positive behavior, developmentally appropriate guidance
practices, guidance versus punishment, and involving
families to support children’s social and emotional growth.

ECED 118  1 credit
Building Bridges: Positive Guidance
Focuses on positive communication and direct guidance
techniques to support children’s social/emotional
development and strategies for specific challenging
behaviors.

ECED& 120  2 credits
Practicum-Nurturing Relationships
Applies theories of best practice in an early learning setting.
Focuses on developing supportive relationships while
keeping children healthy and safe.

ECED 127  W  3 credits
Practicum II/Curriculum
Integrates the practicum experience with Developmentally
Appropriate Early Childhood observation techniques.
Designed to increase objectivity and skill in recording the
behavior of young children. Students are required to work
in an Early Childhood setting and to plan and implement
appropriate activities to facilitate observation and recording
of behavior. Students will be observed by the instructor and
meet with the instructor in weekly seminar sessions.
Prerequisite: ECED 126 with a grade of C or better, or instructor
permission.

ECED 128  Sp  3 credits
Practicum III/Learning Stories
Refines and extends skills acquired in Practicum I and II and
continues to develop skills required of persons with primary
responsibility for groups of young children as outlined by the
Washington State Skills Standards Project. Skills are practices
in an early childhood setting.
Prerequisite: ECED 126 and 127 with a grade of C or better, or
instructor permission.

ECED& 132  W  3 credits
Infants/Toddler Care
Examines the unique developmental needs of infants and
toddlers. Study the role of the caregiver, relationships with
families, developmentally appropriate practices, nurturing
environments for infants and toddlers, and culturally relevant
care.

ECED 136  F  1 credit
Building Bridges: Infant Soc & Emotional
Development
Early care and education professionals will learn about the
emerging language of the young child, fostering secure
caregiver-child relationships and the importance of culturally
responsive partnerships with families.

ECED 137  W  1 credit
Building Bridges: Healthy Physical
Development
Provides the early care and education professionals the
components of quality infant/toddler care. This course
will focus on care giving practices to support healthy and
safe environments that support sensorimotor exploration.
Participants will explore ways to partner with families to
support the healthy development of the young child.
ECED 138 Sp 1 credit
Building Bridges: Responsive Learning Environments
Provides the early care and education professionals tools to create safe, nurturing, and engaging environments to support culturally responsive early learning, brain and language development in the earliest years.

ECED& 139 3 credits
Admin of Early Learning Programs
Develops administrative skills required to develop, open, operate, manage, and assess early childhood education and care programs. Explore techniques and resources available for Washington State licensing and NAEYC standard compliance.

ECED& 160 F 5 credits
Curriculum Development
Provides an investigation of learning theory and its relationship to curriculum development for young children. Students will focus on methods for planning and evaluating developmentally appropriate curriculum to facilitate development in the areas of language, fine/gross motor, social-emotional, cognitive and creative based on the interests and cultures of families and children.

ECED& 170 Sp 3 credits
Environments-Young Child
Focuses on the adult’s role in designing, evaluation, and improving indoor and outdoor environments which ensure quality learning, nurturing experiences, and optimize the development of young children.

ECED& 180 Sp 3 credits
Lang/Literacy Develop
Develops teaching strategies for language acquisition and literacy skill development examined at each developmental stage (birth-age 8) through the four interrelated areas of speaking, listening, writing, and reading.

ECED 186 F 3 credits
Social-Emotional Growth
Studies the development of infant/toddler social and emotional competence including how infants grow in the context of nurturing environments and how their mental health involves the psychological balance of the infant-family system.

ECED 187 W 3 credits
Language Development for Infants/Toddlers
Explores the role of the care provider as a facilitator through observation and study in supporting cognitive and language development in infants and toddlers. Instructional strategies to foster language development including environmental design will be studied. Strategies are discussed to assist early childhood professionals in becoming culturally competent and responsive teachers who develop nurturing relationships with both children and families.

ECED 188 Sp 3 credits
Group Care for Infants/Toddlers
Explores the importance of a child’s attachment to primary care providers as a secure base for development. Emphasis will be given on creating a healthy, emotionally secure environment. Strategies are discussed to assist early childhood professionals in becoming culturally competent and responsive teachers who develop nurturing relationships with both children and families.

ECED& 190 Sp 3 credits
Observation-Assessment
Practice collecting and presenting observation data of children, teaching practices and learning centers in an early childhood setting.

ECED 204 W 3 credits
Music and Movement for Young Children
Provides ideas for creating movement and music programs appropriate for young children. The course emphasizes singing, movement, appropriate records, rhythm instruments, and other related media for creative activities throughout the day. Provides instruction on perceptual motor skills designed for young children.

ECED 209 Sp 1 credit
Early Childhood Mentor Development
Provides an overview of the phases of the mentor coach process. Includes instruction in the techniques of reflective practice, the benefits for the mentor partners, and the setting of goals and objectives which align with personal and organization values.
Prerequisite: Instructor approval required.

ECED 219 Sp 3 credits
Math, Science and Computers in Early Designed to provide a working knowledge and understanding of math, science and computer concepts, developmentally appropriate activities and sequencing for the individual child as well as group experiences.

ECED 220 W 3 credits
Arts and Crafts for Young Children
Prepares students to present a developmentally appropriate creative art program to young children. Class will cover child developmental growth and the exploration of art process through media and materials.

ECED 261 F 3 credits
Practicum IV/Principles
Students will study the guiding Principles of Early Childhood Education and will have the opportunity to gradually assume the role of a lead teacher with a group of young children. Students observe and plan activities under the guidance of a mentor teacher and will also attend agency staff meetings.
Prerequisite: EDUC& 115, EDUC& 130, ECED& 105, ECED& 107, ECED& 120, ECED& 190, completed with a C or better and ENGL 099.
ECED 262 W 3 credits
Practicum V/Practice
Students will employ the guiding Practices of Early Childhood Education and will have the opportunity to assume the role of a lead teacher with a group of young children. Students observe and plan activities under the guidance of a mentor teacher and will also attend agency staff meetings.
Prerequisite: ECED 261.

ECED 263 Sp 3 credits
Practicum VI/Professionalism
Students will explore the Profession Code of Conduct as outlines by the National Association of Education of Young Children (NAEYC) and its application in the workplace. Students will have the opportunity to assume an in-depth role of a lead teacher with a group of young children. Students observe, assess and plan activities under the guidance of a mentor teacher and will also attend agency staff meetings.
Prerequisite: ECED 262.

Earth Science (ERSI)

ERSI 104 S 5 credits
Introduction to Earth Sciences NSL
Provides a comprehensive picture of Earth and its unique place in the universe by examining major concepts from geology, oceanography, meteorology, and astronomy. Topics include Earth-Sun relationships, plate tectonics, rock cycle, evolution of stars, composition and structure of atmosphere, hydrosphere, and lithosphere, characteristics of oceans, solar systems, and stars.

ERSI 105 F,W,S 5 credits
Earth Systems NSL
Presents a holistic view of Earth (our environment) as a system with emphasis on understanding the relationships of humans, atmosphere, hydrosphere, solid Earth, and biosphere. Major concepts are drawn from astronomy, meteorology, oceanography, geography, geology, biology, and ecology. Man’s part in the global ecosystem is analyzed, as is our dependence on natural resources. Presents a holistic view of Earth (our environments) as a system with emphasis on understanding the relationships of humans, atmosphere, hydrosphere, solid Earth, and biosphere. Includes lab.

ERSI 109 5 credits
Energy and Our Planet: Earth Sciences NSL
Earth science is an explanation of the earth system and the energy that powers its subsystems. Concepts are from astronomy, meteorology, oceanography, geology, physical geography and ecology. Students will gain an understanding of the natural world and science, as well as develop skills to apply and teach how scientific principles apply to everyday life. Intended primarily for elementary education and early childhood education majors. Part of a three quarter sequence; students are not required to take entire sequence. Includes lab.

Economics (ECON)

ECON 104 S 5 credits
Contemporary Economic Issues SS
Introduces basic economic models and applies these models to current economic problems. Addresses related policy options and choices.
Prerequisite: MATH 079 or TECH 079.

ECON 105 F,W,S 5 credits
Introduction to Economics SS
Introduction to basic principles of macro and micro economics for the non-major. This course introduces the market and pricing system, the economics of the firm, the distribution of wealth and income, the institutional aspects of distribution, and international trade and monetary transaction, as well as the concepts of national wealth, operation of the United States economy, factors of production, and distribution of wealth. Additionally, this course discusses critical economic thought and its history.

ECON& 201 F,W,S 5 credits
Micro Economics SS
Studies the market and pricing system, the economics of the firm, the distribution of wealth and income, the institutional aspects of distribution, and international trade and monetary transaction.
Prerequisite: MATH 088 or TECH 088 or BUS 104 and ENGL&101 or BUS 119.

ECON& 202 F,W,S 5 credits
Macro Economics SS
Introduces concepts of national wealth, operation of the United States economy, factors of production, and distribution of wealth. Emphasis is on measurement and composition of national income and factors that affect its fluctuation.
Prerequisite: ECON& 201 with a grade of C or better.
Education (EDUC)

EDUC& 115 F 5 credits
Child Development
Builds a functional understanding of the foundation of child development, prenatal to early adolescence. Focus on the physical, social, emotional, and cognitive development of children, reflective of cross cultural and global perspectives. Develop skills in observing and documenting child growth and development, identify theory in practice, and critical reflection of assumptions.

EDUC 119 W 2 credits
Curriculum and Instruction
Investigates learning theories and their relationship to the curriculum design process, course development, implementation, and evaluation. Focus is placed on gaining a working understanding of the State Learning Goals and Essential Academic Learning Requirements.

EDUC& 130 S,S 3 credits
Guiding Behavior
Examines the philosophical principles and theories promoting social competence in young children and creating safe learning environments. Develop skills promoting effective interactions, providing positive individual guidance, and enhancing group experiences.

EDUC& 136 F 3 credits
School Age Care
Develops skills to provide developmentally appropriate and culturally relevant activities and care, specifically: preparing the environment, implementing curriculum, building relationships, guiding academic/social skill development, and community outreach.

EDUC 140 Sp 3 credits
Education And The Law
Surveys the legal, health, and safety issues as they pertain to the rights and responsibilities of teachers and students within the school setting, including safety in the workplace. Other topics include child abuse and neglect laws, reporting procedures, the Code of Ethics, ADA, contracts, tenure, dismissal procedures, and academic freedom.
Prerequisite: ENGL 101& with a grade of C or better.

EDUC& 150 Sp 3 credits
Child/Family/Community
Integrates the family and community contexts in which a child develops. Explores cultures and demographics of families in society, community resources, strategies for involving families in the education of their child, and tools for effective communication.

EDUC 191 F 3 credits
Introduction To Tutoring
Trains tutors in the basic techniques involved in helping others learn how to learn. These techniques include effective communication, human relations training, teaching strategies and study skills. Practice in utilizing tutoring skills will be incorporated. Actual tutoring experience will be evaluated during the quarter.

EDUC& 203 W 3 credits
Exceptional Child
Provides an overview of programs for young children with special needs, including current issues and trends, the identification and assessment process, the IEP/IFSP process, and a look at some intervention and instructional strategies for working with young children with special needs.

EDUC& 205 F,W,Sp 5 credits
Intro to Education w/Field Experience:DIV
Introduces the field of education. Integrates readings, lectures, discussions, written assignments, student presentations, guest speakers, and participation in actual elementary classrooms to provide students with a broad survey of the K-12 educational system. Addresses the multicultural and diverse experiences of students in the educational setting.

EDUC 214 3 credits
Instructional Strategies
Provides an overview of the role of the teacher as facilitator. Includes instruction in knowledge and application of various classroom techniques, lesson planning, and questioning skills. Provides a framework for understanding and applying fundamental elements and essential principles of instruction.

EDUC 215 3 credits
Classroom Management
Provides pre-service teachers the necessary skills to observe and manage all aspects of the classroom. Topics include discipline, student evaluations, record keeping, grouping strategies, classroom environments, safety in the classroom, and application of ‘best practices’ curriculum.

Engineering (ENGR)

ENGR 106 Sp 3 credits
Engineering Problems
Introduces engineering and the engineering professions. Emphasizes analysis of actual engineering problems at the mathematical and reasoning levels of introductory students. Within this analytical framework, tools and concepts such as measurement theory, error analysis, dimensional analysis, metric units, systems of modeling, engineering design, and principles of elementary physics are incorporated.
Prerequisite: High school or 100-level physics or chemistry, or instructor permission. Concurrent enrollment in MATH& 142.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Term</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>ENGR&amp; 121</td>
<td>F,W,Sp,S</td>
<td>1-3</td>
<td>Engineering Graphics I</td>
<td>Involves students in communicating design ideas, developing visualization abilities, and analyzing engineering data through the use of graphical techniques and practices. Includes free-hand sketching, use of drafting instruments, line work, lettering, orthogonal projection, pictorials, basic dimensioning, and an introduction to computer-aided design modeling.</td>
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<tr>
<td>ENGR&amp; 122</td>
<td>F,W,Sp,S</td>
<td>1-3</td>
<td>Engineering Graphics II</td>
<td>Involves students in the use of graphical techniques and practices applied towards engineering design and analysis. Includes dimensioning and tolerancing, descriptive geometry, production of working drawings, advanced computer-aided design modeling, and an introduction to parametric solid modeling. Prerequisite: ENGR&amp; 121 or instructor permission.</td>
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<tr>
<td>ENGR&amp; 123</td>
<td>F,W,Sp,S</td>
<td>1-3</td>
<td>Engineering Graphics III</td>
<td>Involves students in the use of parametric solid modeling towards design on three-dimensional part and assembly models. Includes creating part and assembly drawings from 3D models, modifications throughout the design process, and comparing the many parametric solid modeling software packages available. Prerequisite: ENGR&amp; 121 and ENGR&amp; 122 or instructor permission.</td>
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<tr>
<td>ENGR 204</td>
<td>Sp</td>
<td>6</td>
<td>Electrical Circuits</td>
<td>Provides application of fundamental electrical principles in designing engineering solutions associated with linear circuit analysis, mathematical models of electrical components and circuits; sources, resistors, capacitors, inductors, operational amplifiers, and associated simple differential equations. Prerequisite: PHYS 222, MATH&amp; 152 and computer literacy.</td>
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<tr>
<td>ENGR 205</td>
<td>Sp</td>
<td>5</td>
<td>Design Of Logic Circuits</td>
<td>Covers the design, analysis, and implementation of combinational logic circuits. Introduces sequential logic circuits. Prerequisite: MATH&amp; 141.</td>
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<tr>
<td>ENGR 206</td>
<td>W</td>
<td>5</td>
<td>Microprocessor Systems</td>
<td>Covers microprocessor/microcontroller system architecture, instruction sets, interfacing, assembly and C language programming. Prerequisite: CS 270, ENGR 205.</td>
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<tr>
<td>ENGR 210</td>
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<td>5</td>
<td>The Environmental Physics of Energy</td>
<td>Solicits student descriptions of energy production, patterns of use, and the challenges posed by dwindling energy resources using the language of physics: work, power, energy, heat, and the Conservation of Energy Principle. Students explore the physical/technological bases of current/proposed technologies, along with current scientific discussions of environmental effects such as global warming and radiation. Students cannot receive credit for both ENGR 210 and PHYS 210. Prerequisite: Algebraic, writing, and presentation skills; a previous distribution science course (e.g. PHYS&amp; 100) would be helpful.</td>
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<tr>
<td>ENGR&amp; 214</td>
<td>F</td>
<td>5</td>
<td>Statics</td>
<td>Engages student use of vector algebra and the sweeping power of a few fundamental principles to design real engineering solutions to problems involving discrete and distributed forces, resultants, equations of equilibrium, moments about points and lines, centroids, moments of inertia, and the principle of virtual work. Prerequisite: MATH&amp; 151 and either PHYS 251 or ENGR 106.</td>
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<tr>
<td>ENGR&amp; 215</td>
<td>Sp</td>
<td>5</td>
<td>Dynamics</td>
<td>Engages student application of vector algebra and the sweeping power of a few fundamental principles to design real engineering solutions to problems involving translational and rotational motion associated with kinematics, kinetics, the impulse-momentum and work-energy principles, and related topics. Prerequisite: ENGR&amp; 214, MATH&amp; 152, and PHYS 251 or instructor permission.</td>
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<tr>
<td>ENGR&amp; 224</td>
<td>Sp</td>
<td>5</td>
<td>Thermodynamics</td>
<td>Encourages student application of basic principles of macroscopic thermodynamics to design solutions to engineering problems involving energy transformations and state changes, the first and second principles of thermodynamics, macroscopic properties of substances, flow analysis, entropy, equations of state, power and refrigeration cycles, and thermodynamic relations. Prerequisite: ENGR&amp; 214, PHYS 251, and MATH&amp; 152 or instructor permission.</td>
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<tr>
<td>ENGR&amp; 225</td>
<td>Sp</td>
<td>5</td>
<td>Mechanics of Materials</td>
<td>Engages students in application of fundamental principles and concepts of stress, strain and their relationships to design engineering solutions associated with axial loads, torsion and bending, combined stresses, properties of materials, columns, and repeated loadings. Prerequisite: ENGR&amp; 214, concurrent enrollment in MATH&amp; 152, and PHYS 252 or instructor permission.</td>
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English (ENGL)

ENGL 065  F,W,Sp,S  5 credits
Reading and Writing Basics
Provides an understanding of the reading and writing process including how to write clear sentences and paragraphs. Instruction in vocabulary development and effective reading are also covered. Students have opportunities to work individually as well as in collaboration with others. Prerequisite: COMPASS score of 40-68 in reading.

ENGL 072  F,W,Sp,S  1-2 credits
Sentence and Paragraph Structure
Provides opportunity to improve skills writing complete and coherent sentences and paragraphs. Sentence patterns, paragraph development, and paragraph unity also are presented. This individualized course may be used to satisfy the high school English equivalency requirement.

ENGL 073  F,W,Sp,S  1-2 credits
The College Essay
Presents an opportunity for improvement in short essay writing. Topics include developing the introduction, body, and conclusion, and using transitions to aid coherence. This individualized, pre-college-level lab course may be used to satisfy the high school English equivalency requirement.

ENGL 075  F,W,Sp,S  5 credits
Reading and Writing Improvement
Provides instruction in improving reading and writing. Emphasizes on using steps of the writing process to achieve clear expression and, at the same time, how to improve literal and critical reading expression; also stresses improving literal and critical reading comprehension skills. Students needing additional remediation will complete individualized reading, spelling and/or grammar modules in Self-Paced Learning. Prerequisite: COMPASS scores of 69-80 in reading or completion of ENGL 065 with a grade of C or better.

ENGL 090  F,W,Sp,S  1 credit
Spelling Improvement
Provides a review of basic spelling patterns, including consonant and vowel sounds, blends, plurals, and common confusing words. Emphasis is placed on learning and using tools for catching and correcting spelling errors. An initial diagnostic test will determine placement.

ENGL 094  1-3 credits
SP Learn Lab Practicum
Provides individualized plans to master language, reading comprehension, and/or study skills as recommended by the instructor and/or student. This course is graded on a pass/fail basis.

ENGL 095  F,W,Sp,S  1 credit
Vocabulary Building
Improves vocabulary skills for reading, writing, and speaking. Develops skills for determining the meaning of unfamiliar words.

ENGL 096  F,W,Sp,S  2 credits
Reading Workshop I
Provides individualized and group instruction in reading. Students will explore their strengths and weaknesses in reading and learn to draw upon strengths to overcome comprehension barriers and successfully build from written texts.

ENGL 097  F,W,Sp,S  2 credits
Reading Workshop II
Continues individualized and group instruction in reading. Students will explore their strengths and weaknesses in reading and learn to draw upon strengths to overcome comprehension barriers and successfully build from written texts.

ENGL 098  F,W,Sp,S  5 credits
College-Ready English I
Introduces skills for reading college-level texts and writing college-level papers. Provides strategies for generating, developing, supporting, and organizing ideas, as well as revising for coherence, clarity, correctness, and documentation. This is an outcomes-based pathway to college-level composition courses.

ENGL 099  F,W,Sp,S  5 credits
College-Ready English II
Provides individualized plans to master language, reading comprehension, and/or study skills as recommended by the instructor and/or student. This course is graded on a pass/fail basis. Develops skills for reading college-level texts and writing college-level papers. Provides strategies for generating, developing, supporting, and organizing ideas, as well as revising for coherence, clarity, correctness, style, and appropriate documentation. This is an outcomes-based pathway to college-level composition courses. Credit cannot be earned for both ENGL 099 and TECH 105.
Prerequisite: Satisfactorily meets outcomes for ENGL 098.

ENGL& 098  F,W,Sp,S  5 credits
English Composition I
Part one of the composition sequence. Introduces first-year college writing skills including thesis discovery, development, support, organization, sentence correctness, diction, style, and final editing. Assignments might include and integrate exposition, narration, argumentation and response. Emphasizes analytical reading and introduces formal academic documentation. Prerequisite: College level reading and writing skills or completion of ENGL 099 or TECH 105 with a grade of C or better.
ENGL& 102  F,W,Sp,S  5 credits
Composition II  HA
Part two of the composition sequence. Practices and develops first-year writing skills by emphasizing theme, argumentation, analysis, integration and documentation of evidence as part of a formal research paper, sentence correctness, diction, and style.
Prerequisite: ENGL& 101 with a grade of C or better.

ENGL 104  F,W,Sp,S  1-2 credits
Accelerated Review of Grammar and Punctuation
Develops knowledge of standard English grammar and punctuation for college and the workforce through individualized skill work with verbs, subjects, and modifiers. Emphasis is also placed on sentence structure, capitalization, and the following punctuation marks: the comma, apostrophe, semicolon, and quotation marks. Students develop the tools to spot and correct errors in their writing.

ENGL 106  2 credits
NW Voices Creative Writing
Provides exposure to regional writers and creative writing techniques. Students read and discuss the work of Northwest Voices authors, attend the Northwest Voices writing workshops, and revise and complete creative works inspired from that workshop.

ENGL 108  Sp  5 credits
Introduction to Literature  H
Provides a broad introduction to various genres of literature, such as the novel, play, poem, short story, and non-fiction essay through extensive reading, discussion, and writing about literary works. Students will gain an appreciation for the diversity of literary offerings and strategies for interpreting them. The course prepares students for more advanced literature courses.
Prerequisite: ENGL 099 or TECH 105 concurrent or passed.

ENGL 110  F,W,Sp,S  5 credits
Industrial Communication
Offers practical, job-related study of written and interpersonal communications. Writing includes resumes, memos, work orders, and short reports. Interpersonal communications involve active listening, as well as paraphrasing, perception checking, and group problem solving.

ENGL 124  F  2 credits
Arts Magazine Publication I  H, P
Provides instruction and guidance for students editing the Lower Columbia College arts magazine, and examines the role of the literary smallpress in print and electronic publication.
Prerequisite: ENGL& 101 required; ENGL 231 or 234 recommended.

ENGL 125  W  2 credits
Arts Magazine Publication II  H, P
Provides instruction and guidance for students editing the Lower Columbia College arts magazine, and examines the role of the literary smallpress in print and electronic publication.
Prerequisite: ENGL& 101 required; ENGL 231 or 234 recommended.

ENGL 126  Sp  2 credits
Arts Magazine Publication III  H, P
Provides instruction and guidance for students editing the Lower Columbia College arts magazine, and examines the role of the literary smallpress in print and electronic publication.
Prerequisite: ENGL& 101 required; ENGL 231 or 234 recommended.

ENGL 140  W  5 credits
Introduction to Women Writers:DIV  H
Examines literature written by women over a broad span of time to understand how social forces relating to gender, class, and race shaped their writing. Genres to be read will include poetry, short stories, non-fiction essays, and novels. Satisfies Diversity requirement.
Prerequisite: ENGL 099 or TECH 105 or college-level writing ability.

ENGL 161  3 credits
Speed Reading
Helps develop flexibility, versatility, speed of comprehension, and vocabulary acquisition skills. The emphasis is on developing good reading habits and adaptability to different types of materials.

ENGL 204  S  5 credits
The Novel  H
Provides extensive reading, discussing, and writing about the works by classic novelists. Through these novels, students will gain an understanding of how the novel works, how it has developed over a period of 200 years, and how its universal truths and insights are still applicable to the modern world.

ENGL 205  W,Sp  5 credits
Film and Drama Appreciation  H,D
Focuses on how film and drama reflect and shape community attitudes. The course looks historically at the development of narrative and style; however, particular attention is paid to how visual images shape our perceptions, reflect biases, or challenge stereotypes imbedded in popular culture. Students watch and discuss plays and films to develop critical analysis skills for interpretation and evaluation. They read representative works from Asian, African, and native American authors and filmmakers.
Prerequisite: ENGL& 101 or instructor permission.
ENGL 215 F 5 credits
Introduction to Film Studies H
Examines the conventions and techniques of narrative
cinema with some readings in film theory. Explores the
development of narrative and style and how film reflects
and shapes community attitudes. Studies watch and discuss
select representative films to develop critical analysis skills
for interpretation and evaluation.
Prerequisite: ENGL& 101 or instructor permission.

ENGL 221 F 3 credits
Teach/Tutor Writing I
Provides instruction in composition theory. Students will
read theories from various composition pedagogies, will
practice tutoring writing, will reflect and discuss how to
teach and tutor writing effectively, and will design and
implement a lesson on teaching writing.
Prerequisite: ENGL& 101.

ENGL 222 W 3 credits
Teach/Tutor Writing II
Continues the concepts and skills from English 221 and
applies them to a broader range of composition theory
and tutoring experience. Students will read additional
theory from various composition pedagogies, will continue
to practice and model tutoring writing, will analyze, and
discuss how to teach and tutor writing effectively, and will
design and implement a lesson on teaching writing.
Prerequisite: ENGL& 101, ENGL 221.

ENGL 223 Sp 3 credits
Teach/Tutor Writing III
Continues the concepts and skills from English 222 and
applies them to a broader range of composition theory
and tutoring experience. Students will deepen their
understanding of various composition pedagogies, will
gain further experience in tutoring writing, will analyze,
and discuss how to teach and tutor writing effectively, and
will design and implement a lesson on teaching writing.
Prerequisite: ENGL& 101, ENGL 221.

ENGL 224 F 2 credits
Art Magazine Publication IV H, P
Provides instruction and guidance for students editing the
Lower Columbia College arts magazine, and examines
the role of the literary smallpress in print and electronic
publication.
Prerequisite: ENGL 124 required; ENGL 231 recommended.

ENGL 226 Sp 2 credits
Art Magazine Publication VI H, P
Provides instruction and guidance for students editing the
Lower Columbia College arts magazine, and examines
the role of the literary smallpress in print and electronic
publication.
Prerequisite: ENGL 126 required; ENGL 231 recommended.

ENGL 231 F, W, Sp 5 credits
Creative Writing H
Provides an introduction to the writing of short fiction and
poetry. Assignments explore techniques of writing and
revising, examining the elements of stories and poems.
Students critique each other’s work and study the published
work of other writers.
Prerequisite: ENGL 101 or instructor permission.

ENGL 232 F, W, Sp 5 credits
Creative Writing H
Engages students in writing and revising short fiction and
poetry. Assignments explore the elements of stories and
poems but allow students to concentrate on one form or
the other. Students critique each other’s work and study the
published work of other writers.
Prerequisite: ENGL 101 and 231 or consent of instructor.

ENGL 233 F, W, Sp 5 credits
Creative Writing H
Engages students in writing and revising short fiction and
poetry. Students may choose to concentrate on stories or
poems in individual projects. In class sessions, students
critique each other’s work and study the published work
of other writers.
Prerequisite: ENGL 101, 231, and 232 or instructor permission.

ENGL 234 5 credits
Creative Writing: Life Stories H
Emphasizes the writing, constructive analysis, and revision
of creative nonfiction, focusing on the personal experience.
Students use journaling and respond to other exercises to
develop ideas from personal experience; write, revise, and
critique one another’s work; and study the published work
of other writers.
Prerequisite: ENGL& 101 or instructor permission.

ENGL& 235 W 5 credits
Technical Writing H
Emphasizes written workplace communications designed
especially for the CIS, engineering, and science professions.
Topics covered include document format, visual design,
multi-tiered audience, formal and informal reports,
instructions, letters, and memos.
Prerequisite: ENGL& 101 with a grade of C or better.
ENGL& 244  W,Sp  5 credits  
American Literature I  H  
Presents the context for works of American literature and studies major works by authors such as Melville, Dickinson, and Hemingway. Explores the major forms and movements in American literature.  
Prerequisite: ENGL& 101 or instructor permission.

ENGL 245  Sp  5 credits  
Contemporary Literature  H  
Explores contemporary films, drama, poetry, and fiction using analysis, interpretation, and evaluation. Field trips to view a movie or a play, or attendance at a poetry reading may be included. Essays and other written work are required.  
Prerequisite: ENGL& 101

ENGL 246  Sp  5 credits  
Rainbow Readers: LGBTQ Literature:DIV  H,D  
Examines some of the major concepts of modern and contemporary queer culture through close readings of writers of the 20th Century Lesbian, Gay, Bisexual, Transgender and Queer community.  
Prerequisite: ENGL& 101 or instructor permission.

ENGL 251  F  5 credits  
English Literature  H  
Surveys major authors from Beowulf, Chaucer, Shakespeare, Donne, Johnson, and Milton through 18th Century authors including Swift, Pope, and Fielding. Seminar-discussion format.  
Prerequisite: ENGL& 101 or instructor permission.

ENGL 252  Sp  5 credits  
English Literature  H  
Surveys major authors from Blake and Wordsworth among other Romantic writers, Tennyson and Browning among other Victorian writers, and poets and prose writers of the 20th century, including Conrad, Yeats, Joyce, Lawrence, Eliot, Becket, and Auden. The course is operated in a seminar-discussion format.  
Prerequisite: ENGL& 101 or instructor permission.

ENGL 254  5 credits  
Understanding Fiction and Poetry  H  
Examines traditional and experimental fiction and poetry, presenting the short story and the poem as related literary forms. Students will gain an understanding of the elements of fiction and poetry, as well as the ways in which writers reflect or challenge prevalent societal values through literature. This experience provides an opportunity for students to demonstrate their progress in developing the knowledge, skills, attitudes and values contained in the course plan outcomes.  
Prerequisite: ENGL& 101 or instructor permission.

ENGL 255  W  5 credits  
Sci-Fi Literature & Film  H  
Examines science fiction as an important genre in literature and film. Explores historical and modern examples of science fiction, focusing on significant works in the history and development of the genre, such as H. G. Wells’ The Time Machine, William Gibson’s Neuromancer, and Kubrick’s 2001: A Space Odyssey. Considers science fiction’s power to engage with challenging social and political issues, and explores how it both inspires and is inspired by science and technology. This course meets the Humanities requirement for transfer degrees and professional/technical degrees.  
Prerequisite: ENGL& 101 or ENGL 108 or instructor permission.

ENGL 256  5 credits  
Special Topics in Literature  H  
Focuses on special topics or genres of literature, identified each quarter. Students learn the literary depth of a specific genre or thematic topic while gaining an understanding of the different forms of literature. This experience provides transfer students an opportunity to demonstrate their progress in developing the knowledge, skills, attitudes and values.  
Prerequisite: ENGL& 101 or instructor permission.

ENGL 260  W  5 credits  
World Literature  H  
Examines literature from a thematic approach, tracing the human struggle for intellectual identity and personal autonomy in such foundational works as Gilgamesh, the Bible, the Greek classics, and in more recent writings.  
Prerequisite: ENGL 102 or instructor permission.

ENGL 270  F,Sp  5 credits  
Literature for Children  H  
Offers a critical survey of literary materials appropriate for children from nursery through elementary school age with practice in using literature with groups.

ENGL 280  W  5 credits  
Multicultural Literature:DIV  H  
Provides students with an introduction to multicultural literature. Emphasis is placed on increasing awareness and understanding of the values, beliefs, and experiences of people from different cultures, especially those of Asia, Latin America and Africa.  
Prerequisite: ENGL& 101 with a grade of C or better or instructor permission.
English as a Second Language (ESL)

ESL 010  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Reading-Level 1
Develop communication skills in order to enhance personal, social, and workplace environments in a beginning literacy level ESL reading course for those needing survival English. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 011  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Writing-Level 1
Develop communication skills in order to enhance personal, social, and workplace environments in a beginning literacy level ESL writing course for those needing survival English. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 012  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Speaking-Level 1
Develop communication skills in order to enhance personal, social, and workplace environments in a beginning literacy level ESL speaking course for those needing survival English. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 013  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Listening/Observing-Level
Develop communication skills in order to enhance personal, social, and workplace environments in a beginning literacy level ESL listening/observing course for those needing survival English. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 014  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Integrated-Level 1
Develop communication skills in order to enhance personal, social, and workplace environments in a beginning literacy level ESL course (integrating speaking, listening, reading, writing, and technology) for those needing survival English. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 015  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Computer Technology & Job Readiness-Level 1
Develop English communication skills in order to enhance personal, social, and workplace environments in a beginning ESL literacy level Computer Technology and Job Readiness course. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 016  F,W,Sp,S  1-20 credits
Beginning ESL Literacy Intensive Oral communication and Grammar-Level 1
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance personal, social, and workplace in essential daily speech patterns in formal and informal conversations/situations to improve speaking skills at a beginning literacy ESL level. Prerequisite: CASAS Appraisal Exam 180 and below.

ESL 020  F,W,Sp,S  1-20 credits
Low Beginning ESL Reading-Level 2
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance personal, social, and workplace environments in a Low Beginning Level ESL reading course. Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.

ESL 021  F,W,Sp,S  1-20 credits
Low Beginning ESL Writing-Level 2
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a Low Beginning Level ESL writing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.

ESL 022  F,W,Sp,S  1-20 credits
Low Beginning ESL Speaking-Level 2
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a Low Beginning Level ESL speaking course. Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.

ESL 023  F,W,Sp,S  1-20 credits
Low Beginning ESL Listening/Observing-Level 2
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a Low Beginning Level ESL listening/observing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.

ESL 024  F,W,Sp,S  1-20 credits
Low Beginning ESL Integrated-Level 2
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a Low Beginning Level ESL course (integrating speaking, listening, reading, writing, and technology). Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.

ESL 025  F,W,Sp,S  1-20 credits
Low Beginning ESL Literacy Computer Technology & Job Readiness-Level 2
Develop English communication skills in order to enhance personal, social, and workplace environments in a low beginning level ESL technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.
ESL 026 F,W,Sp,S 1-20 credits
Low Beginning ESL Literacy Intensive Oral Communication and Grammar-Level 2
Develop and practice ESL Level 2 English grammar and use intensive drill in pronunciation, stress, reduced forms, and intonation of the English language in essential daily speech patterns in formal and informal conversations/situations to improve speaking skills at a beginning ESL level. Prerequisite: CASAS Appraisal Exam, CASAS score of 181-190, and instructor permission.

ESL 030 F,W,Sp,S 1-20 credits
High Beginning ESL Reading-Level 3
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance personal, social, and workplace environments in a High Beginning Level ESL reading course. Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 031 F,W,Sp,S 1-20 credits
High Beginning ESL Writing-Level 3
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a High Beginning Level ESL writing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 032 F,W,Sp,S 1-20 credits
High Beginning ESL Speaking-Level 3
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a High Beginning Level ESL speaking course. Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 033 F,W,Sp,S 1-20 credits
High Beginning ESL Listening/Observing-Level 3
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a High Beginning Level ESL listening/observing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 034 F,W,Sp,S 1-20 credits
High Beginning ESL Integrated-Level 3
Further develop communication skills for those who have mastered basic literacy and survival English in order to enhance their personal, social, and workplace environments in a High Beginning Level ESL course (integrating speaking, listening, reading, writing, and technology). Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 035 F,W,Sp,S 1-20 credits
High Beginning ESL Computer Technology & Job Readiness-Level 3
Develop communication skills in order to enhance personal, social, and workplace environments in a High Beginning Literacy Level ESL technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 036 F,W,Sp,S 1-20 credits
High Beginning ESL Intensive Oral Communication and Grammar-Level 3
Develop and practice ESL level 3 English grammar and use intensive drill in pronunciation, stress, reduced forms, and intonation of the English language in essential daily speech patterns in formal and informal/situations to improve speaking skills at a Low Intermediate ESL level. Prerequisite: CASAS Appraisal Exam, CASAS score of 191-200, and instructor permission.

ESL 040 F,W,Sp,S 1-20 credits
Low Intermediate ESL Reading-Level 4
Further develop communication skills for those who have mastered beginning ESL in order to enhance personal, social, and workplace environments in a Low Intermediate Level Integrated ESL reading course. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.

ESL 041 F,W,Sp,S 1-20 credits
Low Intermediate ESL Writing-Level 4
Further develop communication skills for those who have mastered beginning ESL in order to enhance their personal, social, and workplace environments in a Low Intermediate Level Integrated ESL writing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.

ESL 042 F,W,Sp,S 1-20 credits
Low Intermediate ESL Speaking-Level 4
Further develop communication skills for those who have mastered beginning ESL in order to enhance their personal, social, and workplace environments in a Low Intermediate Level Integrated ESL speaking course. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.

ESL 043 F,W,Sp,S 1-20 credits
Low Intermediate ESL Listening/Observing-Level 4
Further develop communication skills for those who have mastered beginning ESL in order to enhance their personal, social, and workplace environments in a Low Intermediate Level Integrated ESL listening/observing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.
Degrees/Certificates

COURSE DESCRIPTIONS

ESL 044  F,W,Sp,S  1-20 credits
Low Intermediate ESL Integrated-Level 4
Further develop communication skills for those who have mastered beginning literacy in order to enhance their personal, social, and workplace environments in a Low Intermediate Level ESL course integrating speaking, listening, reading, writing, and technology. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.

ESL 045  F,W,Sp,S  1-20 credits
Low Intermediate ESL Computer Technology & Job Readiness-Level 4
Develop English communication skills in order to enhance personal, social, and workplace environments in a High Intermediate Level ESL technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.

ESL 046  F,W,Sp,S  1-20 credits
Low Intermediate ESL Intensive Oral Communication and Grammar-Level 4
Develop and practice ESL Level 4 English grammar and use intensive drill in pronunciation, stress, reduced forms and intonation of the English language in essential daily speech patterns in formal and informal conversations/situations to improve speaking skills at a High Intermediate ESL level. Prerequisite: CASAS Appraisal Exam, CASAS score of 201-210, and instructor permission.

ESL 050  F,W,Sp,S  1-20 credits
High Intermediate ESL Reading-Level 5
Further develop communication skills for those who have mastered Low Intermediate ESL in order to enhance personal, social, and workplace environments in an Advanced Level Integrated ESL reading course. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 051  F,W,Sp,S  1-20 credits
High Intermediate ESL Writing-Level 5
Further develop communication skills for those who have mastered Low Intermediate ESL in order to enhance their personal, social, and workplace environments in a High Intermediate Level Integrated ESL writing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 052  F,W,Sp,S  1-20 credits
High Intermediate ESL Speaking-Level 5
Further develop communication skills for those who have mastered Low Intermediate ESL in order to enhance their personal, social, and workplace environments in a High Intermediate Level Integrated ESL speaking course. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 053  F,W,Sp,S  1-20 credits
High Intermediate ESL Listening/Observing-Level 5
Further develop communication skills for those who have mastered Low Intermediate ESL in order to enhance their personal, social, and workplace environments in a High Intermediate Level Integrated ESL listening/observing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 054  F,W,Sp,S  1-20 credits
High Intermediate ESL Integrated-Level 5
Further develop communication skills for those who have mastered Low Intermediate ESL in order to enhance their personal, social, and workplace environments in a High Intermediate Level Integrated ESL course integrating speaking, listening, reading, writing, and technology. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 055  F,W,Sp,S  1-20 credits
High Intermediate ESL Computer Technology & Job Readiness-Level 5
Develop English communication skills in order to enhance personal, social, and workplace environments in a High Intermediate Level ESL technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 056  F,W,Sp,S  1-20 credits
High Intermediate ESL Intensive Oral Communication and Grammar-Level 5
Develop and practice ESL Level 5 English grammar and use intensive drill in pronunciation, stress, reduced forms and intonation of the English language in essential daily speech patterns in informal and formal conversations/situations to improve speaking skills at a Low Advanced ESL level. Prerequisite: CASAS Appraisal Exam, CASAS score of 211-220, and instructor permission.

ESL 060  F,W,Sp,S  1-20 credits
Advanced ESL Reading-Level 6
Further develop communication skills for those who have mastered High Intermediate ESL in order to enhance personal, social, and workplace environments in an Advanced Level Integrated ESL reading course. Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.

ESL 061  F,W,Sp,S  1-20 credits
Advanced ESL Writing-Level 6
Further develop communication skills for those who have mastered High Intermediate ESL in order to enhance their personal, social, and workplace environments in an Advanced Level Integrated ESL writing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.
ESL 062  F,W,Sp,S  1-20 credits
Advanced ESL Speaking-Level 6
Further develop communication skills for those who have mastered High Intermediate ESL in order to enhance their personal, social, and workplace environments in an Advanced Level Integrated ESL speaking course. Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.

ESL 063  F,W,Sp,S  1-20 credits
Advanced ESL Listening/Observing-Level 6
Further develop communication skills for those who have mastered High Intermediate ESL in order to enhance their personal, social, and workplace environments in an Advanced Level Integrated ESL listening/observing course. Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.

ESL 064  F,W,Sp,S  1-20 credits
Advanced ESL Integrated-Level 6
Further develop communication skills for those who have mastered High Intermediate ESL in order to enhance their personal, social, and workplace environments in an Advanced Level Integrated ESL course (integrating speaking, listening, reading, writing, and technology). Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.

ESL 065  F,W,Sp,S  1-20 credits
Advanced ESL Computer Technology & Job Readiness-Level 6
Develop English communication skills in order to enhance their personal, social, and workplace environments in an Advanced Level ESL technology and job readiness course. Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.

ESL 066  F,W,Sp,S  1-20 credits
Advanced ESL Intensive Oral Communication and Grammar-Level 6
Introduces and practices ESL Level 6 English grammar and use intensive drill in pronunciation, stress, reduced forms, and intonation of the English language in essential daily speech patterns in formal and informal conversations/situations to improve speaking skills at a High Advanced ESL level. Prerequisite: CASAS Appraisal Exam, CASAS score of 221-235, and instructor permission.

ESL 070  F,W,Sp,S  1-3 credits
Educational Interview-ESL
Develop and monitor a personal plan of action to reach their personal, educational, and workplace goals by providing an orientation to the college community and the Transitional Studies program and their resources and services.

ESL 071  F,W,Sp,S  1-20 credits
I-BEST Academic Support-Level 1
A Beginning Literacy Level ESL course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language Skills for Health Services, etc. Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 200 and below.

ESL 072  F,W,Sp,S  1-20 credits
I-BEST Academic Support-Level 2
A Beginning Basic Education ESL course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language Skills for Health Services, etc. Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 201 to 210, or instructor permission.

ESL 073  F,W,Sp,S  1-20 credits
I-BEST Academic Support-Level 3
A Low Intermediate Basic Education ESL course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language Skills for Health Services, etc. Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 211 to 220, or instructor permission.

ESL 074  F,W,Sp,S  1-20 credits
I-BEST Academic Support-Level 4
A High Intermediate Basic Education ESL course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language Skills for Health Services, etc. Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 221 to 235, or instructor permission.
COURSE DESCRIPTIONS

**ESL 075** F,W,Sp,S 1-20 credits

**I-BEST Academic Support-Level 5**

A Low Adult Secondary Education ESL course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 236 to 245, or instructor permission.

**ESL 076** F,W,Sp,S 1-20 credits

**I-BEST Academic Support-Level 6**

A High Adult Secondary Education ESL course for second language students who are currently working or preparing to work in a specific job area and are enrolled in an I-BEST program. The course integrates math, reading, writing, listening and speaking skills with the linguistic requirements of the job. The content of this course varies each time it is offered. It may include English language skills for specific content areas such as certification for childcare workers, English Language skills for Health Services, etc.

Prerequisite: CASAS Appraisal Exam and CASAS Appraisal score of 246 to 255, or instructor permission.

**ESL 080** F,W,Sp,S 1-20 credits

**ESL High Adult Electives**

Strengthen a student’s communication, technology, and/or interpersonal skills in order to enhance their personal, social, and workplace environments in a high adult secondary education level 6 ESL Electives course. The course reflects knowledge gained through student selected classes and can be quantified by writing, demonstration and evidence collection.

**ESL 081** F,W,Sp,S 1-20 credits

**ESL High Adult English**

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ESL High Adult Secondary Education writing course. Focuses on the causes and effects of social, cultural, political, intellectual and economic change over the years in the United States. Examines the foundation of US government: key political ideas, theories, processes, and institutions.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 253, or instructor permission.

**ESL 082** F,W,Sp,S 1-20 credits

**ESL High Adult Math**

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ESL high adult secondary education math course.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

**ESL 083** F,W,Sp,S 1-20 credits

**ESL High Adult Science & Lab**

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ESL high adult secondary education science and lab science course. Students will gain an understanding of the natural world and science as a field of study. Intended for students with little or no science background. Includes lab.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

**ESL 084** F,W,Sp,S 1-20 credits

**ESL High Adult US History/Government**

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ESL high adult secondary US History and Government education course. Focuses on the causes and effects of social, cultural, political, economic and political-economic change over the years in the United States. Examines the foundation of US government: key political ideas, theories, processes, and institutions.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

**ESL 085** F,W,Sp,S 1-20 credits

**ESL High Adult Washington State History**

Strengthen English communication skills in order to enhance their personal, social, and workplace environments in a high adult secondary education ESL Washington State history course. Provides a social, political, economic history of the Pacific Northwest with particular emphasis on the State of Washington, including Native American history and gender/ethnic history.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

**ESL 086** F,W,Sp,S 1-20 credits

**ESL High Adult Contemporary History**

Strengthen basic academic skills in order to enhance their personal, social, and workplace environments in an ESL high adult secondary Contemporary History course. Focus on current world events, issues and problems. Highlights recent historical events and examines the causes and effects on geopolitics, environments, and population.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

**ESL 087** F,W,Sp,S 1-20 credits

**ESL High Adult Occupational Education**

Strengthen a student’s communication, technology, and/or interpersonal skills in order to enhance their personal, social, and workplace environments in a high adult secondary education level 6 ESL Occupational Education course. The course reflects knowledge gained through prior life experience, occupational achievement, or demonstrable skill and can be quantified by writing, display and evidence collection.

Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.
ESL 088  F,W,Sp,S  1-20 credits
ESL High Adult Health and Physical Education
Strengthen basic academic skills while focusing on health, nutrition, and fitness in order to enhance their personal, social, and workplace environments in an ESL high adult secondary Health and Physical Education course. Students will gain an understanding of the effects nutrition, exercise and environmental factors have on the body and how to set personal goals to improve their overall health. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

ESL 089  F,W,Sp,S  1-20 credits
ESL High Adult Fine Arts
Strengthen basic academic skills while focusing on artistic understanding and appreciation in order to enhance the personal, social, and workplace environments of students in an ESL high adult secondary Fine Arts course. Students will gain a deeper understanding of the arts and how to evaluate the impressions gained by exposure to different forms of media. Prerequisite: CASAS Appraisal Exam, CASAS Appraisal score of 246 to 255, or instructor permission.

Environmental Science
(ENVS)

ENVS 150  W  5 credits
Environment and Society:DIV NS
Introduces the interdisciplinary field of environmental science with an emphasis on the disproportionate impacts environmental problems have on human societies, especially low-income and minority groups. Major concepts include ecology, biodiversity, natural resources, toxicology, population, climate change, and environmental justice. Explores current environmental problems and solutions through case studies set in Africa, Asia, Latin America, and North America.

ENVS 215  W,Sp  5 credits
Environmental Issues & Applications NSL
Examines, analyzes, and solves problems stemming from many of today’s most pressing issues: natural resources, energy, toxic and hazardous compounds, and human population. Uses a case study approach to investigate these issues with an emphasis on four overlapping themes: climate change, environmental toxicology, conservation biology and restoration ecology, and sustainability. Field trips may be required. Laboratory is included. Prerequisite: ENGL& 101 or instructor permission, MATH 088 or TECH 088.

Fire Science (FISC)

FISC 101  F  3 credits
Introduction to Fire Protection
Studies the history and development of fire service as well as safety and security movements. Identifies general fire hazards and their causes and how to apply fire protection principles.

FISC 105  F  3 credits
Fundamentals of Fire Prevention
Studies fundamentals of fire inspection standards and techniques of evaluation, identification of hazards, and making practical recommendations. Students write reports and conduct on-site inspections of buildings to locate hazards and recommend improvements. Students study fire prevention and education programs and conduct presentations.

FISC 109  F  3 credits
Fire Service Safety
Studies firefighter health and safety as it relates to Washington State. Emphasizes day-to-day health and safety of department members. Addresses standards and regulations, the safety officer’s role, accident prevention and investigation, record keeping. Structural, EMS, hazardous materials, and wild land emergencies will be addressed.

FISC 110  W  3 credits
Fire Science I
Studies characteristics and behavior of fire, fundamental physical laws and chemical reactions occurring in fire and fire suppression. Analyzes factors contributing to fire’s cause, rate of burning, heat generation and travel, by-products of combustion, fire confinement, control, and extinguishing.

FISC 111  F  10 credits
Basic Fire Fighting Skills
Studies basic tools, procedures, techniques and safety precautions utilized by the fire fighter during fire ground operations based on nationally recognized professional standards and Washington State ‘basic fire fighter’ training requirements.

FISC 125  Sp  5 credits
Fire Service Rescue
Studies a variety of procedures, equipment, and tools utilized by emergency rescue personnel. Student will become familiar with building search, auto extrication, rope rescue, and water rescue. Prerequisite: FISC 112 or instructor permission.

FISC 129  3 credits
Emergency Incident Management
Studies the emergency incident management (IMS) process as it applies to the fire service at the ‘fire company’ level. Emphasis to include basic command structure and components, incident safety considerations, personnel accountability, and application of the management process to a variety of emergency situations.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISC 170 W</td>
<td>Emergency Medical Technician I</td>
<td>8</td>
<td>Provides skill development in recognition of symptoms of illness and injuries, and in proper emergency care problems. Includes proficiency tests and evaluation sessions. Prepares students to take the state certification examination for EMT I.</td>
</tr>
<tr>
<td>FISC 205 W</td>
<td>Fire Investigation and Cause Determination</td>
<td>3</td>
<td>Studies burning characteristics of combustibles. Interprets clues and burn patterns leading to point of origin. Identifies incendiary indications, sources of ignition and materials ignited, and how to preserve the fire scene evidence.</td>
</tr>
<tr>
<td>FISC 206 Sp</td>
<td>Hazardous Materials</td>
<td>3</td>
<td>Reviews basic chemistry as it applies to fire technology. Studies the identity of hazardous material by color, symbol, and marking. Covers recommended practices for storage and handling of solids, liquids, and gases, and studies fire control methods for these materials. Meets federal standards for awareness and operations level.</td>
</tr>
<tr>
<td>FISC 207 W</td>
<td>Fire Apparatus and Pumping Equipment</td>
<td>4</td>
<td>Provides an introduction to various fire pumps and their operation. Reviews operating principles and construction of various types of equipment, and covers preventive maintenance and troubleshooting. Also introduces ground flow and friction loss considerations, and pump discharge pressure calculations.</td>
</tr>
<tr>
<td>FISC 210 W</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
<td>Offers knowledge and skills in the various construction features of buildings. Includes structural features affecting fire spread and building collapse, the effect of fire on materials, fire stops and ratings. Use of blueprints and plans to understand building features and pre-fire planning is emphasized.</td>
</tr>
<tr>
<td>FISC 215 Sp</td>
<td>Fixed Systems and Extinguishers</td>
<td>3</td>
<td>Studies portable extinguisher equipment, fire alarm and detection systems, sprinkler systems and standpipes, protection systems for special hazards, explosion release, ventilated systems, inert atmosphere and static bonding.</td>
</tr>
<tr>
<td>FISC 220</td>
<td>Wildland Firefighter II</td>
<td>3</td>
<td>Trains persons in the basic skills of wildland fire fighting. Examines wildland fire behavior, fire control tactics, operation of fire pumps, standards for fire fighter safety and survival, and an introduction to the Incident Command System. Students completing this course will be qualified to suppress wildland fire under close supervision.</td>
</tr>
<tr>
<td>FISC 224</td>
<td>Fire Service Instructor I</td>
<td>3</td>
<td>Provides a basic understanding of the implementation strategies for specific fire service curricula and instructional methodology used in the workplace. Each student will demonstrate the knowledge of and the ability to deliver instruction from prepared materials, and effectively critique lesson deliveries of their peers.</td>
</tr>
<tr>
<td>FISC 230</td>
<td>Wildland Firefighter II Refresher</td>
<td>1</td>
<td>Refreshes basic skills of wildland fire fighting. Examines wildland fire behavior, fire control tactics, operation of fire pumps, standards for firefighter safety and survival, and an introduction to the Incident Command System. Students completing this course will be qualified to suppress wildland fire under close supervision. Prerequisite: FISC 220 or equivalent.</td>
</tr>
<tr>
<td>FISC 255 Sp</td>
<td>Fire Fighting Tactics and Strategy</td>
<td>3</td>
<td>Studies fire ground tactics and strategy, responses and size-ups, protection of exposures, containment, extinguishing, the command post, combined operations, analysis and post-mortem evaluation, pre-fire surveys, and planning.</td>
</tr>
</tbody>
</table>

**Geography (GEOG)**

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<tr>
<td>GEOG 105 F,S</td>
<td>Physical Geography</td>
<td>5</td>
<td>Examines our physical environment especially the global distribution and interrelationship of such factors as climate, soils, flora, fauna, and landforms. Topics include maps, Earth-Sun relationships, seasons, time, weather, hydrology, landforms, climate types, natural vegetation assemblages, biomes, ecosystems, and their significance in the biosphere. Laboratory includes use of globes, maps, aerial photographs, data tables, and graphs for analysis and problem solving. Use of the scientific method is emphasized.</td>
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**Geology (GEOL)**

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<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL&amp; 101 F,S</td>
<td>Introduction to Physical Geology</td>
<td>5</td>
<td>Examines Earth’s internal composition and structure, its internal and superficial processes. Major topics: rocks, minerals, weathering, mass movements, erosion, deserts, coasts, ground water, plate tectonics, volcanoes, earthquakes, mountain building, and geologic resources and hazards. Laboratory work includes identification of rocks, minerals, and landforms, interpretation of topographic maps and cross-sections, stereograms, photographs, and satellite images.</td>
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</tbody>
</table>
GEOL 105  F,S  5 credits
Geology: Earth Revealed  NSL
Offers a comprehensive one-term study of the Earth’s physical properties and processes. Major topics are rocks and minerals, weathering, erosion, deserts, coasts, ground water, plate tectonics, volcanoes, earthquakes, mountain building, and geologic hazards. Laboratory work, to be completed at home, includes identification of minerals and rocks and map interpretation. This telecourse is recommended only for the strongly self-motivated student. It is not intended for geology majors.

GEOL 118  W  5 credits
Historical Geology  NSL
Examines the physical and biological evolution of Earth as determined from evidence preserved in rocks. Major topics include plate tectonics, evolution, biogeography, geologic time, and climate change. Laboratory includes identification of rocks and fossils, determination of relative and absolute ages, and interpretation of past environments. A field trip may be required.

GEOL 124  S  1 credit
Geology Field Trip: Columbia Gorge  NS
Primarily explores the geology in the Columbia River Gorge between The Dalles, Oregon and Vancouver, Washington. Provides students with the opportunity to observe, and make hypotheses about, the processes that shape our planet and that affect humans, salmon, and other organisms.

GEOL& 208  F,S  5 credits
Geology of the Pacific Northwest  NSL
Explores the rocks, plate tectonics and other geologic features, and evolution of the Pacific Northwest, including the Cascades, Columbia Plateau, Olympic Mountains, and Yellowstone. Laboratory includes rock identification, interpretation of topographic and geologic maps of the Northwest. Field trips may be required.

HLTH 100  F,W,Sp,S  3 credits
Occupational Safety and Health
Introduces fundamental concepts and practices related to safety and hygiene in the work place, including bloodborne and airborne pathogens, AIDS awareness and risk reducing behaviors. First Aid/CPR-D training is included. Students are issued First Aid/CPR-D Health Care Provider card upon completion.

HLTH 105  W  1 credit
First Aid/CPR/Bloodborne Pathogens
Instructs students in First Aid and adult, child and infant CPR through the American heart Association for healthcare providers including AED training. Students will receive first aid and CPR certification with completion of this course. This course will also cover bloodborne pathogen training, which students will also receive certification in with the completion of the course.

HLTH 106  F,W,Sp  2 credits
Health Today  SSA
Analyzes a vast array of information on the dangers of risky health behaviors and the benefits of healthy decisions as it affects one’s life. Emphasis will be on personal decision-making and positive behavioral changes toward the goal of wellness as a lifestyle.

HLTH 110  W  2 credits
Personal Health
Discusses a wide variety of major health topics. Students will look at the health topics from a personal perspective and will identify ways to enhance their own personal health and wellness. Topics may include but are not limited to: nutrition, fitness, cancer, cardiovascular disease, drugs, alcohol, tobacco, stress, relationships, psychological health, environmental health, pregnancy and childbirth, and weight management.

HLTH 135  F,W,Sp,S  2 credits
Food and Fitness
Explores two components of a healthy lifestyle; nutrition and exercise. Introduces basic concepts of nutrition and healthy dietary choices. Provides information necessary for developing a safe, well-rounded exercise program.

High School Completion (HSC)

HSC 75  F,W,Sp,S  1-5 credits
Introduction to Drama
Introduces the development of drama and genres of theater from ancient Greece to contemporary theater. Students will read, view, and perform plays as they learn to recognize literary themes in drama. Types of drama include tragedy, comedy, and melodrama. Course is intended for CEO and HSC students.

HSC 76  F,W,Sp,S  1-5 credits
Family Life
Provides information to promote healthy family functioning. Explores family life issues and challenges. Introduces foundational concepts to effective parenting, such as safety, childhood illnesses, and behavior management. Presents decision-making and conflict resolution strategies. Promotes healthy choices, especially as they relate to families. Course is intended for CEO and HSC students.

HSC 79  F,W,Sp,S  1-5 credits
Math Concepts-Geometry
Introduces elementary logic and mathematical proof using traditional geometry concepts. Prepares the student for future math courses while introducing critical thinking, problem-solving, and collaborative working math-related real world situations. Course is intended for CEO and HSC students.
HSC 080  F,W,Sp,S  1-5 credits
Mathematical Concepts-Algebra
Provides a review of arithmetic operations on whole numbers, fractions, and decimals. Covers applications of percent, proportions, and ratios in order to solve multi-step problems using the fundamentals of algebra. Prepares the student for future math courses while introducing critical thinking, problem-solving, and collaborative work in math-related real world situations. Course is intended for CEO and HSC students.

HSC 085  F,W,Sp,S  1-5 credits
Health
Integrates a variety of health concepts, skills, and behaviors to plan for personal and lifelong health goals. Topics include awareness and consequences of risky behaviors, disease prevention, overall wellness, and identification of community health resources. Students are taught how to access accurate information that they can use to promote health for themselves and others. Open to CEO and HSC students. Prerequisite: Admission into the CEO program.

HSC 086  F,W,Sp,S  1-5 credits
Introduction to Literature
Explores elements of the short story: plot, character, setting, point of view, tone, theme, and symbol through a variety of genres. Students will explore fiction as social commentary, examine examples of regionalism, and study the relationship between visual arts and fiction. Course is intended for CEO and HSC students.

HSC 087  F,W,Sp,S  1-5 credits
Introduction to Poetry
Focuses on reading and writing poetry in both traditional and experimental forms. The elements of poetry are examined through tone, voice, rhyme, and rhythm. Students will also identify imagery created by figures of speech and explore the connection between art and poetry. Course is intended for CEO and HSC students.

HSC 088  F,W,Sp,S  1-5 credits
Introduction to Writing
Offers an introduction to patterns of development in writing and practice in the writing process.

HSC 090  F,W,Sp,S  1-5 credits
Natural Hazards
Surveys the physical characteristics, cultural characteristics, and locations of places on Earth’s surface, with an emphasis on human interaction on the environment and the geographic context of global issues.

HSC 091  F,W,Sp,S  1-5 credits
Environmental Science
Surveys ecological concepts, which include using the scientific method for gathering data, exposure to scientific laws and theories, population dynamics, making careful observation, humans and the environment, and basic theories of biodiversity.

HSC 092  F,W,Sp,S  1-5 credits
Civics
Surveys the foundations of citizenship through exploration of the United States system of government. Presents the Constitution, three branches of government, and the American legal system. Examines the impact of United States foreign policy, economy, and political systems on American society. Course is intended for CEO and HSC students.

HSC 093  F,W,Sp,S  1-5 credits
U.S. History I
Surveys United States history from pre-colonial times up to the beginning of the Civil War.

HSC 094  F,W,Sp,S  1-5 credits
U.S. History II
Surveys United States history from the Civil War to the present. Continuation of U.S. History I.

HSC 095  F,W,Sp,S  1-5 credits
Washington State History

HSC 096  F,W,Sp,S  1-5 credits
Contemporary World Problems
Surveys current world problems in the following areas: human rights, environment, globalization and the economy, and civic action and responsibility. Students will apply previous learning to current world problems by placing them in their proper historical, geographic, political, economic, and cultural contexts. Course is intended for CEO and HSC students.
HSC 097 F,W,Sp,S 1-5 credits
Consumer Finance
Presents topics for personal money management, including budgeting, banking, consumer credit, and taxes.

History (HIST)

HIST& 116 5 credits
Western Civilization I H
Traces the economic, political, social and cultural development of various western civilizations up to c. 1500. We will also endeavor to show that contemporary American culture is the living, breathing manifestation of ideas, beliefs, customs, habits and institutions of Western cultural traditions.

HIST& 117 5 credits
Western Civilization II SS
Examines the material and mental developments in Western religious, political, economic, social and cultural life from the early sixteenth century to the mid-nineteenth century. More specifically, the course explores the profound changes attending the Reformation, the scientific revolution, the rise of the modern nation state, the Enlightenment, and the projection of the Western presence abroad.

HIST& 126 F 5 credits
World Civilizations I:DIV H
Focuses on the origins, development, and features of various societies in the ancient and classical world, including the peoples of Asia, Africa, Europe, the Americas, and Oceania. This course examines the political, social, and cultural contours of particular societies and the interactions and relationships among people of different historical cultures.

HIST& 127 W 5 credits
World Civilizations II:DIV SS
Examines the dramatic changes in world history in the pre-modern and early modern period, a time of profound and unprecedented transformations in many societies around the world. Historical topics include: the development of new economic systems such as mercantile capitalism; large-scale interactions such as the Columbian exchange; scientific, philosophical, and political revolutions; and new global relationships such as colonialism. Attention will be paid to the increasing interdependence of Asia, Africa, Europe, the Americas, and Oceania.

HIST& 128 F,S 5 credits
World Civilizations III:DIV SS
Examines the ways people have shaped and reacted to the issues of the modern world, such as 1) the emergence of global economic systems and their political, social and cultural effects; 2) the role of warfare, empire, power relations, and revolution in shaping international events; and 3) the interactions and reactions when cultural values, ideas, and technologies of many societies are in sustained contact. Attention will be paid to the sustained interdependence of Asia, Africa, Europe, the Americas, and Oceania.

HIST& 136 F,W,S 5 credits
U.S. History 1 SS
Focuses on the causes and effects of social, cultural, political, intellectual and economic change, from the colonial period to the end of the Civil War. Attention will also be given to the events outside North America that contributed to the emergence of the United States.

HIST& 137 F,W,S 5 credits
U.S. History 2 SS
Focuses on the causes and effects of social, cultural, political, intellectual and economic change, from the end of the Civil War to the present. Attention will also be given to the events (e.g., immigration) outside North America that contributed to the emergence of the U.S. as well as the effects (e.g., imperialism) of its emergence on the rest of the world.

HIST 205 SS
History of East Asia:DIV SS,D
Explores the past two hundred years of East Asia history, paying particular attention to China and Japan. It examines a number of topics: 1) the political, economic, and cultural changes and continuities within East Asian societies, 2) the interrelations among these countries, and 3) their interactions with the world outside their region.

HIST 214 5 credits
Sports in American History SS
Examines the American sporting experience from the colonial period through the 21st century. Focuses on the rise of organized sports institutions and how race, class, gender, ethnicity, and religion have shaped the relationship between sport and society. Students will learn about the histories of various sports, the athlete and spectator experience, consumerism and celebrity culture.

HIST& 215 W 5 credits
Women in U.S. History:DIV SS,D
Focuses on the history of American women from pre-European settlement to the present. Lectures, readings, and assessments emphasize how female roles in family, work, politics, and culture have changed over time, creating new definitions of womanhood. Emphasizes the diversity among women in terms of race, ethnicity, class, and sexuality. Fulfills the Diversity requirement.

HIST 254 5 credits
History of Washington and the Pacific NW SS
Provides a social, political, economic history of the Pacific Northwest with particular emphasis on the State of Washington, including Native American history and gender/ethnic history. Course meets the Washington State History requirement for teacher certification. This may be offered as a Capstone.
## Human Development (HDEV)

### HDEV 075  2 credits
**Journeys-A Workshop for Women**
Targets women in life transitions - divorce, empty nest, job loss, etc., and provides them with tools to understand the challenges involved in change and new beginnings. Explores the process of transition, models of adapting to change, self awareness, and self assessment. Participants will explore educational and career options, with a focus on non-traditional careers that offer high-wage, high-demand opportunities, and develop a personal Success Plan. Meets for seven weeks and is graded on a pass/fail basis.

### HDEV 080  1-7 credits
**Transitions**
Explores and develops the coping skills, attitudes, and behaviors needed to deal with job loss or underemployment and move forward with career and life planning. Main topics include dealing with job loss, assessing interests and skills, career exploration, goal setting, and job finding skills. Additional topics may include specialized skill assessment, financial management, utilizing community resources, advanced interview preparation, computerized job search. Skill building in reading, writing, math, and computers may also be integrated with these studies.

### HDEV 090  2 credits
**Success by Your Design**
Explores the connection between their thoughts and behaviors. Students will apply concepts in this interactive course to cultivate “Thought patterns for a Successful Career. Through self-reflection and discussion, students will examine thought processes and how to control them, as well as understand how the mind works to create beliefs, habits, and attitudes, thus re-calibrating them for success.

### HDEV 100  1 credit
**New Student Orientation**
Helps students gain in-depth knowledge of the enrollment process, student rights and responsibilities, and college policies and procedures. Emphasizes activities and services available in Career and Employment Services, Computer Labs, the Learning Center, Financial Aid, and the LCC Library. Students will be required to attend two student success series workshops.

### HDEV 101  1-5 credits
**Career Planning**
Launches students into an investigation of interests, values, and careers, followed by decision-making and goal setting. The course may be offered for various credits and emphasis in the content varies accordingly. Launches students into an investigation of interests, values, and careers, followed by decision-making and goal setting. Life planning component concentrates on self-esteem, self-exploration, emotions, relationships, and locus of control. The class may be offered for different 2 or 3 credits as well. Emphasis in the content will vary accordingly.

### HDEV 106, 107, 108, 206, 207, 208  1-2 credits
**Activities/Events Programming**
Involves students in development and implementation of variety of co-curricular activities. Students learn to organize educational, cultural, social, and recreational programs for campus community, as well as budget development, committee participation, and cooperative programming with campus and community organizations. Students enrolled for one credit either serve on the ASLCC Programming Board as a program director or some combination of programming committee(s) and or special projects assignment(s). Additional credit is available for additional committee or project responsibilities. This course is offered on a pass/fail basis.

### HDEV 110  1-3 credits
**Job Finding Skills**
Provides effective job search techniques, including identification of transferable skills, job applications, job readiness, and creative job search. Students should be ready to conduct an active job search.

### HDEV 115  2 credits
**Stress Management**
Focuses on developing effective life coping skills as related to interpersonal, work, family, and academic stressors. Students examine their beliefs, emotions, and self-defeating behaviors.

### HDEV 116, 117, 118, 216, 217, 218  1-3 credits
**Leadership and Student Government**
Offers experience in elections, meeting procedure, college and ASLCC committees, planning and conducting governance activities, planning and managing budgets, deliberating issues and setting goals for student welfare, and effective leadership responsibilities. Students enrolled in this class are voting members of the Executive Council of the ASLCC.

### HDEV 120  1-6 credits
**Individual and Group Relations**
Extends to students opportunities in transfer information, goal setting, and other areas related to behavior change. Course may be repeated up to six times for a total of 6 credits.
HDEV 125  2 credits
Assertiveness Training
Examines interpersonal dynamics of relationships and personality. Students explore fears and anxieties connected to their interpersonal conflicts, as well as the impact of their personality on communication and behavior.

HDEV 127  1-3 credits
Student Support Services
This variable 1 - 3 credit course is designed to increase the retention, graduation, and transfer rate of first-generation, low-income, and students with disabilities who are enrolled as Student Support Services participants. This course will expose students to strategies and activities designed to enhance a student's ability to learn, develop educational perspective, and improve academic performance. Emphasis on student's Individualized Academic Plan and personal needs will determine the class content for each student.

HDEV 128  F,W,Sp  1 credit
Transfer Planning
Facilitates the transfer process and increases the transfer rate of students who are first-generation, low-income, and/or DSS eligible, and who are enrolled as TRiO Student Support services participants. Exposes students to strategies and activities relevant to the process of choosing, applying, and enrolling as a transfer student at a 4-year institution. Emphasis on each student's long-range academic and career plan will determine the class content. This is a stand alone course that can be repeated for up to 3 credits. Tuition waived via TRiO-SSS Grant.

HDEV 145  2 credits
Anger Management
Encourages students to examine irrational beliefs and self-defeating behaviors. Focus is on covert and overt behaviors contributing to the power held by our “intimate enemies.”

HDEV 150  1-3 credits
Psychology of Humor
Engages students in laughter and play. Focuses on biological and psychological effects of humor. Designed to help students develop health-conscious environment, manage pain, cope with emotional issues, and reduce stress. Pass/ Fail grade.

HDEV 165  F,Sp  2 credits
Lead:Leadership Expl/Dev
Develops leadership skills and abilities. Introduces philosophical, theoretical, and practical elements of leadership. Increases self-awareness of personality type, communication skills, and learning styles. Explores leadership styles, skills, qualities and situations. Develops self-reliance, conflict resolution strategies, and team building skills. Addresses transferability of skills from real-life settings (such as the athletic field or court) to the learning environment and work place. Open only to student athletes. Prerequisite: Instructor permission.

HDEV 221  F  2 credits
Peer Mentoring I
Introduces Peer Mentoring principles to Student Support services Peer Mentors to increase the retention, graduation, and transfer rate of first-generation, low-income, and students with disabilities who are enrolled as Student Support Services first-year participants. Exposes Student Support Services Peer Mentors to strategies and activities designed to enhance first-year students’ abilities to learn, develop educational perspective, and improve academic performance. Topics include leadership, communication, conflict resolution, stress management, and various other mentoring skill sets. Maximum number of credits possible: 2. Tuition waived. Prerequisite: Students must be chosen to be Student Support Services Peer Mentors to enroll in the course.

HDEV 222  W  2 credits
Peer Mentoring II
Provides additional instruction for Peer Mentoring principles to Student Support services Peer Mentors to increase the retention, graduation, and transfer rate of first-generation, low-income, and students with disabilities who are enrolled as Student Support Services first-year participants. Exposes Student Support Services Peer Mentors to strategies and activities designed to enhance first-year students’ abilities to learn, develop educational perspective, and improve academic performance. Topics include leadership, communication, conflict resolution, stress management, and various other mentoring skill sets. Maximum number of credits possible: 2. Tuition waived. Prerequisite: HDEV 221 or instructor permission.

HDEV 223  Sp  1 credit
Peer Mentoring III
Concludes training for Peer Mentoring principles to Student Support services Peer Mentors to increase the retention, graduation, and transfer rate of first-generation, low-income, and students with disabilities who are enrolled as Student Support Services first-year participants. Exposes Student Support Services Peer Mentors to strategies and activities designed to enhance first-year students’ abilities to learn, develop educational perspective, and improve academic performance. Topics include leadership, communication, conflict resolution, stress management, and various other mentoring skill sets. Maximum number of credits possible: 2. Tuition waived. Prerequisite: HDEV 222 or instructor permission.
## Humanities (HUM)

### Humanities I

**HUM 104**  
5 credits  
**Ethics and Cultural Values:DIV**  
H,D  
Explores and analyzes moral issues from various perspectives and examine elements of virtue, duty, obligation, and rights from various classical, traditional, and contemporary systems as presented in Western, Hindu, Buddhist, Confucian, Islamic, and/or African writings, films, literature, and/or practices.  
Prerequisite: College-level reading required.

### Humanities II

**HUM 117**  
5 credits  
**Humanities II**  
H  
Survey of major movements in philosophy, art, music, architecture, and literature from 1300 to 1800 C. E. Exploration, analysis, and discussion of the era's masterpieces from around the world as well as the historical and cultural influences of the Renaissance, the Reformation, the Enlightenment, the Scientific Revolution, and cross-cultural encounters upon such works and the masters who created them.  
Prerequisite: College-level reading required.

### Humanities III

**HUM 118**  
5 credits  
**Humanities III**  
H  
Survey of major movements in philosophy, art, music, architecture, and literature from 1800 C. E. to the present. Exploration, analysis, and discussion of the era's masterpieces from around the world as well as the historical and cultural influences of the Romantic Era, Freudian theory, World Wars I and II, totalitarianism, postmodernism, and the Information Age, and cross-cultural encounters upon such works and the masters who created them.  
Prerequisite: College-level reading required.

### Cultural Journeys:DIV

**HUM 164**  
5 credits  
**Cultural Journeys:DIV**  
H,D  
Explores the rich cultural heritage of different nationalities, ethnic groups and regions as expressed through a people's music, literature, film, and art and critical writing. Quarterly offerings will focus on different cultural groups and their attempts to develop a rich and complex understanding of human existence.

### Myths and Rites:DIV

**HUM 210**  
5 credits  
**Myths and Rites:DIV**  
H,D  
Defines and explores examples of creation, flood, and resurrection myths as well as diverse examples of initiation, celebration, religious, and political rites from around the world and across time. The significance of such myths and rites are also explored through the analysis of works of drama, literature, and film.  
Prerequisite: ENGL& 101

### Arts Alive

**HUM 220**  
1-10 credits  
**Arts Alive**  
H  
Introduces the basics of appreciation and criticism for the arts through study and attendance at college and regional events. Explores and compares ideas and themes expressed in art, literature, music, dance, and theatre around the world. Studies different cultures and styles each term, and may be taken out of sequence. Requires attendance at a minimum of three regional events.

### Thinking about Thinking

**HUM 230**  
5 credits  
**Thinking about Thinking**  
H  
Examines and explores the role of critical thinking and analysis in evaluating written material to include literature, non-fiction prose, and media sources. Applies various models from formal logic and literary criticism to discover both the explicit and implicit meaning of fiction, non-fiction prose and media sources.  
Prerequisite: ENGL& 101 or instructor permission.
Intensive English as a Second Language (IESL)

**IESL 051** 5 credits  
**IESL LISTENING LEVEL I**  
Provides practice in listening to everyday conversational vocabulary in a variety of meaningful contexts at a false-beginner level. Requires students to respond to simple questions, follow short dialogs, and identify topics in short passages with familiar or pre-taught vocabulary. Introduces culture of the American classroom.  
Prerequisite: Instructor permission.

**IESL 052** 5 credits  
**IESL LISTENING LEVEL II**  
Provides practice in listening at the high-beginner level. Strengthens listening skills by building vocabulary and by listening to longer passages and dialogs. Requires students to listen regularly to and understand main ideas in authentic sources of English (TV, radio, video, interviews, etc.) and to comprehend paragraph-length listening passages with familiar or pre-taught vocabulary. Reinforces understanding of the culture of the American classroom.  
Prerequisite: Successful completion of IESL 051 or instructor permission.

**IESL 053** 5 credits  
**IESL LISTENING LEVEL III**  
Provides practice in listening to intermediate-level English in both formal and informal contexts. Requires students to develop skills in pre- and post-listening activities, active listening, comprehension of reduced speech, and simple note taking in a variety of contexts. Reinforces understanding of the culture of the American classroom.  
Prerequisite: Successful completion of IESL 052 or instructor permission.

**IESL 054** 5 credits  
**IESL LISTENING LEVEL IV**  
Provides practice in listening to high-intermediate-level English in both formal and informal contexts. Provides development of skills in listening to “real” English outside the classroom, comprehending reduced speech and fast idiomatic English, and lecture note taking. Reinforces understanding of the culture of the American classroom. If applicable, practice for the listening portion of the TOEFL test may be included.  
Prerequisite: Successful completion of IESL 053 or instructor permission.

**IESL 061** 5 credits  
**IESL SPEAKING LEVEL I**  
Designed for student with some knowledge about English from previous study, this course provides practice in speaking English at a false-beginner level. Improves pronunciation through practice in production of consonant sounds, intonation and rhythm. Focuses on conversational language using familiar topics in a variety of everyday contexts. Introduces culture of the American classroom.  
Prerequisite: Instructor permission.

**IESL 062** 5 credits  
**IESL SPEAKING LEVEL II**  
Provides speaking practice at the high-beginner level. Provides more practice in speaking natural situation language and functional language. Provides conversation practice on everyday topics. Stresses ability to discriminate and produce vowel and consonant sounds, to use correct word order, and to respond in complete sentences. Reinforces understanding of the culture of the American classroom.  
Prerequisite: Successful completion of IESL 061 or instructor permission.

**IESL 063** 5 credits  
**IESL SPEAKING LEVEL III**  
Provides speaking practice at the intermediate level of English. Provides additional practice in vowel and consonant production as well as stress, rhythm, linking, and intonation. Develops fluency by providing practice in conversation and formal speeches. Moves from expression of concrete to abstract ideas. Reinforces understanding of the culture of the American classroom.  
Prerequisite: Successful completion of IESL 062 or instructor permission.

**IESL 064** 5 credits  
**IESL SPEAKING LEVEL IV**  
Provides speaking practice at the high-intermediate level of English. Focuses on discussions of cultural or controversial topics or current events. May require pre-discussion activities in listening or reading as preparation. Provides clarification as needed on degrees of formal and informal language, metaphorical speech, euphemisms, and “sexist” language. Stresses production of comprehensible English. Reinforces understanding of the culture of the American classroom.  
Prerequisite: Successful completion of IESL 063 or instructor permission.

**IESL 071** 5 credits  
**IESL READING LEVEL I**  
Develops reading comprehension for everyday uses, such as reading and understanding directions, forms, maps, menus, ads, letters, and short dialogs and stories. Provides instruction and practice in reading strategies, including pre-reading activities, understanding of spelling patterns, use of context clues, checking for meaning and identifying details. Introduces the culture of the American classroom.  
Prerequisite: Instructor permission.

**IESL 072** 5 credits  
**IESL READING LEVEL II**  
Provides reading instruction at a high-beginner level. Provides practice in building comprehension of paragraphs, short stories, and short articles. Develops vocabulary and knowledge of word roots, prefixes, and suffixes. Provides instruction and practice in use of pre-reading and reading strategies used by good readers.  
Prerequisite: Successful completion of IESL 071 or instructor permission.
IESL 073  5 credits
IESL READING LEVEL III
Provides practice in independent reading and reading with increased fluency at the intermediate level. Provides instruction and practice in finding main ideas and supporting details, and in summarizing textbook materials. Focuses on development of useful or necessary vocabulary to understand passages. Requires students to read longer passages or short books. Reinforces understanding of the culture of the American classroom.
Prerequisite: Successful completion of IESL 072 or instructor permission.

IESL 074  5 credits
IESL READING LEVEL IV
Provides practice in reading for information and strategies for building comprehension. Encourages increase in reading speed. Builds literary and academic vocabulary as well as knowledge of the culture of American academia. Requires in-depth reading of authentic reading materials (novels, textbooks, magazine or newspaper articles). If appropriate, reading practice for TOEFL preparation may be included.
Prerequisite: Successful completion of IESL 073 or instructor permission.

IESL 081  5 credits
IESL WRIT/GRAM LEVEL I
Focuses on writing at the sentence level. Reinforces vocabulary encountered in listening and reading classes. Provides practice in writing for survival use and grammar rules related to simple and compound sentence development; simple tenses; declarative, question, and imperative forms; and singular and plural forms of nouns and verbs. Introduces the culture of the American classroom.
Prerequisite: Instructor permission.

IESL 082  5 credits
IESL WRIT/GRAM LEVEL II
Provides practice in writing descriptive and narrative paragraphs. Focuses on simple, compound, and complex sentence structure; grammar; and topic development. Introduces the writing process. Reinforces understanding of the culture of the American classroom.
Prerequisite: Successful completion of IESL 081 or instructor permission.

IESL 083  5 credits
IESL WRIT/GRAM LEVEL III
Provides practice in writing longer paragraphs of 10-15 sentences. Focuses on writing fluency as well as organizational features. Develops understanding of the writing process. Reviews grammar points covered in IESL 081 and 082 and introduces more advanced points, such as gerunds, infinitives, modals, conditionals, articles, and past perfect and past progressive verbs. Reinforces understanding of the culture of the American classroom.
Prerequisite: Successful completion of IESL 082 or instructor permission.

IESL 084  5 credits
IESL WRIT/GRAM LEVEL IV
Provides instruction and practice in writing the basic form and organization of an essay, using a variety of rhetorical styles. Emphasizes use of the writing process as well as practice in writing thesis statements and paragraph transitions. Grammar focuses on sentence combining and correct use of grammar points covered in IESL 081, 082, and 083. Correct word forms are introduced. Reinforces understanding of the culture of the American classroom. If appropriate, preparation for the TOEFL writing test will be included.
Prerequisite: Successful completion of IESL 082 or instructor permission.

Library (LIBR)

LIBR 094  F,W,Sp,S  2 credits
Information Literacy I
Introduces students to the basic skills, strategies, and tools of information research. Emphasis is placed on the process of identifying information needs, selecting appropriate sources, and evaluating information for accuracy. Students will gain competency in using traditional resources, e.g., the library catalog, and also explore electronic resources such as databases and Internet search engines.

LIBR 101  2 credits
Introduction to Library & Information Research
Introduces students to the basic principles of information research. Emphasis is placed on the process of locating and evaluating information in both print and online formats. Includes basic introduction to searching the Internet, online databases, online library catalogs, and the use of various tools to access information. An annotated bibliography will be developed in an academic area of the students’ choice. This course is especially helpful to those enrolled in classes with a required research paper.

LIBR 104  F,W,Sp,S  2 credits
Information Literacy II
Introduces students to the basic principles of information research. Emphasis is placed on the process of locating and evaluating information in both print and online formats. Includes basic introduction to searching the Internet, online databases, online library catalogs, and the use of various tools to access information. An annotated bibliography will be developed in an academic area of the students’ choice. This course is especially helpful to those enrolled in classes with a required research paper.
LIBR 204 F,W,Sp,S 1-2 credits
Information Literacy III
Guides students through the process of designing and completing a complex research assignment. Emphasis will be placed on evaluating information, including assessing the differences between databases and applying a rubric of information evaluation. Additional topics addressed include proper usage of quotations, citation styles, and annotated bibliographies. Part 1 includes refining a research topic, finding sources, and identifying and avoiding plagiarism. Part 2 focuses on evaluation and annotation of sources and reflection on the research project.

Machine Trades (MASP)

MASP 071 F 1 credit
Machine Shop Support I
Introduces machine shop practices. This theory course addresses topics such as the appropriate uses and safe operation of basic hand tools, saws, bench grinders, drill press and the engine lathe. Concurrent enrollment in MASP 111 required.

MASP 072 W 1 credit
Machine Shop Support II
Introduces machine shop practices. This theory course addresses topics such as basic metallurgy and the appropriate uses and safe operation of milling machines and grinding machines. Concurrent enrollment in MASP 111 required.

MASP 107 F,W,Sp,S 2-6 credits
Machining for Related Occupations
This course will expose students to three basic types of machine tools as well as general shop safety, layout, cutting tool geometry, and precision measuring. The three areas of focus will be hole operations such as drilling, reaming, and tapping, engine lathe operations turning, facing, and boring, the basic operation of the vertical milling machine.

MASP 111 F,W,Sp,S 2-10 credits
Machine Shop I
Designed to introduce the beginning student to the safe operation of basic hand tools, saws, bench grinders, drill press and the engine lathe. The student will use these tools to complete basic projects designed to use the equipment in a wide variety of operations to develop basic skills.

MASP 112 F,W,Sp,S 2-10 credits
Machine Shop II
Continues building skills learned in MASP 111, while expanding the scope to include more advanced procedures on equipment used in the previous class. This class also introduces new equipment such as a shaper and surface grinder, along with tools and procedures required for their safe operation.

Prerequisite: 10 credits of MASP 107 and/or MASP 111.

MASP 113 F,W,Sp,S 2-10 credits
Machine Shop III
Teaches students the use of milling machines and carbide cutting tools. This course will cover various techniques of holding parts and the proper use of different styles of machinery. The student will also learn to apply basic and advanced procedures to accomplish the required tasks.

Prerequisite: 10 credits of MASP 112.

MASP 114 F,W,Sp,S 2-10 credits
Machine Shop IV
Teaches design, and students will build a major project using as many machines and skills as possible to complete the project within the quarter. The project must demonstrate the proper use of machine tools and procedures learned throughout the program.

Prerequisite: 10 credits of MASP 113.

MASP 204 F,W,Sp,S 3 credits
CNC Machining Center Fundamentals
This course introduces students to the history, theory, and workings of computer numerically controlled Machining Centers. The course provides a basic understanding of the required skills to program, set-up, and operate computerized machine tools.

MASP 205 F,W,Sp,S 3 credits
CNC Turning Center Fundamentals
This course introduces students to the history, theory, and workings of computer numerically controlled Turning Centers. The course provides a basic understanding of the required skills to program, set-up, and operate computerized machine tools.

MASP 221 F,W,Sp,S 2-10 credits
CNC Milling
Introduces students through hands-on experience to the basic operations of CNC machines. Working with computer controlled mills, basic machine functions are used to produce parts of various shapes that could not be easily made on conventional equipment.

Prerequisite: MASP 204.

MASP 222 F,W,Sp,S 2-10 credits
CNC Turning
Introduces students through hands-on experience to the basic operations of CNC machines. Working with computer controlled turning centers, basic machine functions are used to produce parts of various shapes that could not be easily made on conventional equipment.

Prerequisite: MASP 205.

MASP 223 F,W,Sp,S 2-6 credits
Advanced CNC Processes
This course exposes the student to advanced machining practices on the CNC Machining Center and CNC Turning Center including introduction of 4th axis set-ups and programmable tailstock operations. It will also include nontraditional set-ups.

Prerequisite: MASP 221 or MASP 222.
Manufacturing (MFG)

MFG 105 F 3 credits
**Industrial Safety**
Provides instruction on safety topics and practices specifically related to industrial work environments. Topics include an overview of OSHA/WISHA requirements, personal protective equipment, energy lock-out/tag-out procedures, material handling, electrical safety, machine guarding, hazardous materials, fire prevention, hazard identification and control, and safety inspection.

MFG 110 4 credits
**Project Management**
The course is an introduction to the theory of project development procedures. The concepts used for project management will include scheduling by means of the critical path method. The fundamentals of CPM will be presented and the concepts applied with software used in industry. Basic job estimating theory will be presented and applied using current industrial software.

MFG 115 F 5 credits
**Manufacturing Processes**
A comprehensive study of the processing of materials, industry standards, and the manufacturing techniques that expose students to the basic types of machine tools as well as cutting tool geometry and precision measuring.

MFG 120 Sp 4 credits
**Qualify Assurance**
Provides the student with a comprehensive introduction to the principles and purpose of Quality Assurance Management in industry. The student will also gain basic understanding of the quality control tools used in industry, such as standard deviation, histograms, distribution curves, etc.

MFG 130 W 5 credits
**Materials Science**
Material Science is a study of the nature, structure, characteristics, and properties of natural and synthetic materials used in contemporary industry. Emphasis will be placed on understanding how the structure and properties of industrial influence the selection of primary materials and their conversion into useful products.

MFG 140 F 4 credits
**Applied Hydraulics**
Covers basic problems of hydraulics, fluids, power, hydraulics actuators, controls, pressures and circuits, and principles of industrial applications.
Prerequisite: MATH 079 or higher or instructor permission.

MFG 205 Sp 3 credits
**Work Teams in Industry**
Explores the interpersonal skills, group roles, team structures, problem solving techniques, and work ethics necessary for success in modern industrial organizations. Practical exercises are used to allow students to develop critical skills.

MFG 230 Sp 4 credits
**Computer Integrated Manufacturing**
Introduces the student to the basic concepts of Computer Integrated Manufacturing and provides a foundation for applying those concepts in actual industrial situations. The course also introduces the student to CAD/CAM concepts and their function in the design and manufacturing process. Students will use specialized software to design parts, simulate the machining process, and observe the production of actual machine parts.

Math (MATH)

MATH 050 F,W,Sp,S 1 credit
**Review Math – Whole Numbers**
Provides a review of addition, subtraction, multiplication, and division of whole numbers.

MATH 074 1 credit
**Math Orientation**
Emphasizes the attributes of a successful math student by providing strategies for overcoming math and test-taking anxiety as well as note-taking, problem solving, and time management. Refresher of fundamental math operations and training on technology used in the classroom included. Topics reviewed may include fractions, decimals, signed numbers, ratio, percent, proportion, order of operations, and vocabulary.

MATH 078 F,W,Sp,S 3 credits
**Pre-College Math I**
Covers operations on and applications of integers, fractions, and decimals. This is the first in a three quarter pre-college mathematics sequence which contains pre-college math modules 01-03. Credit cannot be earned for both MATH 078 and TECH 078.
Prerequisite: Placement exam or instructor permission.

MATH 079 F,W,Sp,S 2 credits
**Pre-College Math I**
Covers operations on and applications of ratios, proportions, and percents. Also includes topics in measurement and geometry. This is the continuation of the first in a three quarter pre-college mathematics sequence which contains pre-college math modules 04-05. Credit cannot be earned for both MATH 079 and TECH 079.
Prerequisite: MATH 078 with a C or better, placement exam, or instructor permission.
MATH 088  F,W,Sp,S  3 credits
Pre-College Math II
Covers solving linear equations and inequalities and an introduction to functions and graphing. Techniques and strategies for problem solving are emphasized. This is the second in a three quarter pre-college mathematics sequence which contains pre-college math modules 06-08. 
Prerequisite: MATH 079 or TECH 079 with a grade of C or better, Placement Exam, or instructor permission.

MATH 089  F,W,Sp,S  2 credits
Pre-College Math II
Covers solving systems of linear equations and operations on polynomials. This is the continuation of the second in a three quarter pre-college mathematics sequence which contains pre-college math modules 09-10. Credit cannot be earned for both MATH 089 and TECH 089.
Prerequisite: C or better in MATH 088 or TECH 088, Placement Exam, or instructor permission.

MATH 098  F,W,Sp,S  3 credits
Pre-College Math III
Covers factoring polynomials and operations on rational and radical expressions. This is the third in a three quarter pre-college mathematics sequence which contains pre-college math modules 11-13. Credit cannot be earned for both MATH 098 and TECH 098.
Prerequisite: C or better in MATH 089 or TECH 089 , Placement Exam, or instructor permission.

MATH 099  F,W,Sp,S  2 credits
Pre-College Math III
Covers solving and graphing quadratic equations and an introduction to exponential and logarithmic functions. This is the continuation of the third in a three course pre-college mathematics sequence which contains pre-college math modules 14-15. Credit cannot be earned for both MATH 099 and TECH 099.
Prerequisite: C or better in MATH 098 or TECH 098, Placement Exam, or instructor permission.

MATH 105  W  5 credits
Math for Health Sciences
Includes a review of the basic arithmetic skills, including whole numbers and decimal numbers; fractions and percentages; powers of 10 and logarithms; introduction to basic algebraic concepts, including fractional equations and formulas; metric, apothecaries and household systems of measurement and calculations needed to determine dosages.
Prerequisite: MATH 078/079 or TECH 079 with a grade of C or better.

MATH 106  F,Sp  5 credits
Industrial Mathematics
Emphasizes basic skills in applied mathematics designed to support students entering the vocational/technical work force of tomorrow. The focus is real world problem solving that students carry to their specific careers. Although the use of math in the workplace is primary, emphasis is given to the critical and creative thinking process as students look to strengthen their use of arithmetic concepts, measurements, practical geometry, basic algebra and right angle trigonometry.
Prerequisite: MATH 079 or TECH 079 with a C or better or instructor permission.

MATH& 107  F,W,Sp,S  5 credits
Math in Society  NS
Functions as a terminal course in mathematics for students whose major does not require further mathematics. The core topics of this course are logic, probability and statistics. Additional topics will be selected by the instructor. These topics could include geometry, number systems, linear programming, set theory, number theory, functions, graph theory, topology, etc.
Prerequisite: MATH 099 with a grade of C or better.

MATH 125  W  5 credits
Applied College Algebra  NS
Covers equations and inequalities; systems of equations and inequalities; graphing linear, quadratic, polynomial, rational, exponential, and logarithmic functions; matrix operations; linear programming and simplex method; and mathematics of finance. The student may also be introduced to Markov processes and game theory. Students may meet prerequisite by demonstrating ability through testing, prior experience, or prior course work not at LCC. Some colleges require this course for business majors. The course will fulfill the quantitative skills or the requirements of the AA-DTA natural science distribution list.
Prerequisite: MATH 099 with a grade of C or better.

MATH& 131  F  5 credits
Math for Elementary Educators I
Strengthens students understanding of problem solving, operations on whole numbers, decimals and fractions, and number theory. This is the first class in a two-part series.
Prerequisite: MATH 099 or TECH 099 with a grade of C or better. (MATH&107 is recommended).

MATH& 132  W  5 credits
Math for Elementary Educators 2  NS
Strengthens students’ understanding of the real number system, probability and statistics, geometry, measurement, functions and graphs. This is the second class in a two-part series.
Prerequisite: MATH& 131 with a grade of C or better. (MATH& 107 is recommended).
MATH& 141  F,W,Sp,S  5 credits  
Precalculus I  NS  
Reviews basic algebraic operations, equations, inequalities, and operations on functions. Analyzes and graphs polynomial, rational, exponential, and logarithmic functions as well as the conic sections. This is the first course in a two course sequence leading to calculus.  
Prerequisite: Placement score or MATH 098 and 099 (or TECH 098 and 099) with a C or better. 

MATH& 142  F,W,Sp,S  5 credits  
Precalculus II  NS  
Covers concepts, properties and algebra of trigonometric functions, including their graphs, inverses, law of sines and cosines, identities, and equations. Introduces parametric and polar coordinates, vector operations, and DeMoivre's Theorem. This is the second course in a two course sequence leading to calculus.  
Prerequisite: Placement score or MATH& 141 with a C or better. 

MATH& 148  Sp  5 credits  
Business Calculus  NS  
Introduces calculus concepts needed by students of management, social science or biology, or can serve as a survey course for liberal arts majors. Course covers sets, systems of numbers, relations and functions, limits, differentiation and integration, including the definite integral, exponential and logarithmic functions and applications from various fields.  
Prerequisite: MATH 125 or MATH& 141 with a grade of C or better. 

MATH 210  F,W,Sp,S  5 credits  
Elements of Statistics  NS  
Introduces the student to descriptive statistics, probability and inferential statistical methods. Topics include probability distributions, sampling techniques, measures of central tendency and dispersion, correlation, regression, hypothesis testing and statistical inference. Credit cannot be earned for both BUS 206 and MATH 210.  
Prerequisite: MATH 099 or TECH 099 with a grade of C or better. 

MATH 211  Sp  3 credits  
Statistical Projects  NS  
Provides an opportunity for students to apply the statistical processes learned in MATH 210/BUS 206 by designing their own statistical project. Topics may include nonparametric statistics, sampling techniques, design of experiments and data analysis. This may be offered as a Capstone course. See Capstone prerequisites. 
Prerequisite: MATH 210 or BUS 206 with a grade of C or better or concurrent enrollment in MATH 210 or BUS 206. 

MATH 215  Sp  5 credits  
Discrete Structures  NS  
Acquaints students with mathematical concepts used in computer science. Topics can include logic, induction, combinatorics, recursion, analysis of algorithms and graph theory.  
Prerequisite: MATH 150 with a grade of C or better or instructor permission. 

MATH 220  Sp  5 credits  
Linear Algebra  NS  
Presents the theory and properties of matrices, determinants and linear transformations. Introduces vector space and the Gram-Schmidt orthonormalization process. Deals with the calculation and application of eigenvalues and eigenvectors.  
Prerequisite: MATH& 152 with a grade of C or better or instructor permission. 

MATH 240  W  5 credits  
Differential Equations  NS  
Introduces techniques of solving ordinary differential equations including the elementary methods used for first order differential equations, method of undetermined coefficients and variation of parameters for higher order equations. Includes techniques of solving systems of differential equations, the method of La Place transforms and series solutions to differential equations.  
Prerequisite: MATH& 254 with a grade of C or better. 

MATH& 254  F  5 credits  
Calculus IV  NS  
Continuation of Calculus III. Topics include partial derivatives, multiple integrals, and vector calculus.  
Prerequisite: MATH& 153 with a grade of C or better.
Medical Assisting (MEDA)

MEDA 101 F,W,Sp,S 3 credits
Medical Vocabulary I
Introduces basic anatomy & physiology while providing a foundation for building a medical vocabulary including the study of prefixes, roots, suffixes, combining forms, and pronunciation. Emphasis is on using medical terms accurately in the context of healthcare employment settings. Also introduces common diseases, and concepts in disease prevention and health promotion. Students will develop resourcefulness through the use of various tools, including a cyclopedic medical dictionary.

MEDA 102 F,W,Sp 3 credits
Medical Vocabulary II
Continues the focus of MEDA 101 by developing a medical vocabulary (using word documents, abbreviations, and stand-alone terms), and knowledge relating to common diseases for body systems not covered in MEDA 101. 
Prerequisite: MEDA 101 or BTEC 181.

MEDA 120 F,Sp 5 credits
Survey of Human Anatomy and Physiology
Introduces students to such fundamental biological principles as the cell and metabolism, then progresses through tissues to human organ systems including respiratory, circulatory, digestive, reproductive, immune, nervous, musculoskeletal, urinary and sensory organs. 
Prerequisite: Competency of ENGL 099 or TECH 105 and MATH 079 or TECH 079, and acceptance into the Medical Assisting Program. Medical Assisting Program Director permission is required for non-MEDA students.

MEDA 122 W 3 credits
Law & Ethics for the Medical Office
Presents the legal, ethical, and bioethical issues relevant to medical office settings. Course features legal cases and legislation. Topics include patient confidentiality, advance directives, consents, professional liability, medical malpractice, release of information, bioethical case studies, the American Association of Medical Assistants’ professional code of ethics, and specific Washington State legislation relating to Medical Assistants.
Prerequisite: Instructor permission.

MEDA 145 Sp 6 credits
Medical Laboratory Techniques
Enables student to develop knowledge and skills necessary to work in a physician’s office laboratory. Focuses on quality control; record keeping; specimen collection - including phlebotomy - processing and disposal; urinalysis; hematology; blood chemistry; immunology and microbiology. This course is part of the educational requirement for the Medical Assistant-Certified, according to Engrossed Substitute Senate Bill 6237 (ESSB 6237), and teaches to the scope of practice according to this law. Students enrolled in this course must show documentation for the hepatitis B vaccine series.
Prerequisite: MEDA 120 or BIOL& 241 and BIOL& 242, and MEDA 162.

MEDA 161 F 4 credits
Examining Room Procedures I
Provides a foundation of knowledge and basic skills for assisting a health care practitioner in a clinical setting. Requires students to perform vital signs, infection control, patient care, and sterile techniques. Explains and discusses OSHA standards for handling biohazardous materials along with first aid and medical emergencies.
Prerequisite: Current enrollment in the Medical Assisting Program. Concurrent requirements: MEDA 120 if not already completed (or BIOL& 241/242).

MEDA 162 W 4 credits
Examining Room Procedures II
Builds on competencies developed in MEDA 161, necessary for assisting a health care provider in a clinical setting. Focuses on electrocardiography; specialty procedures, safety in radiography; nutrition in health and disease, and advanced patient screening techniques.
Prerequisite: MEDA 161 and current enrollment in the Medical Assisting Program.

MEDA 165 Sp 5 credits
Medications in Medical Assisting & Diseases
Explores common diseases and pathology, including diagnostic and treatment modalities. Students will become proficient in using drug reference materials. This course is part of the educational requirement for the Medical Assistant-Certified, according to Engrossed Substitute Senate Bill 6237 (ESSB 6237), and teaches to the scope of practice according to this law. Lecture and laboratory content include administration and documentation of oral, subcutaneous, intramuscular, intradermal, and ophthalmic medications.
Prerequisite: MEDA 120 or BIOL& 241 and BIOL& 242, and MEDA 162.

MEDA 190 S 5 credits
Medical Assisting Preceptorship
Brings together students currently in preceptorships to discuss issues as they arise in the work place. Provides an opportunity to introduce advanced topics in medical assisting or healthcare, as well as job seeking. Topics will include: disaster preparedness, resume writing, and interviewing techniques. Discussion and practice for the AAMA certification exam is included.
Prerequisite: MEDA 145, MEDA 165. Concurrent requirement: Enrollment in MEDA 195.

MEDA 195 S 1 credit
Medical Assisting Seminar
Brings together students currently in preceptorships to discuss issues as they arise in the work place. Provides an opportunity to introduce advanced topics in medical assisting or healthcare, as well as job seeking. Topics will include: disaster preparedness, resume writing, and interviewing techniques. Discussion and practice for the AAMA certification exam is included.
Prerequisite: MEDA 145, MEDA 165. Concurrent requirement: Enrollment in MEDA 195.
MEDA 205 F,W,S  2 credits
Certification Review for Medical Assistants
Provides information to prepare for the Certified Medical Assistant (CMA) exam offered by the American Association of Medical Assistants (AAMA). Includes a review of anatomy, medical terminology, psychology, ethics, and pharmacology, as well as additional topics in clinical and administrative medical assisting.

Music (MUSC)

MUSC 100 F,W,Sp  5 credits
Fundamentals of Music
Introduces music through investigation of melodic, rhythmic, and harmonic structure, and emphasizes development of basic concepts and skills in music through performance on appropriate instruments, such as tonebells, recorders, and guitars.

MUSC 101 F  5 credits
Theory and Musicianship I
Introduces the discipline of music theory. Focuses on the fundamentals of musical notation such as pitches, clefs, accidentals, rhythmic values, key signatures, time signatures, and dynamic markings. Introduces intervals, transposition, triads and their inversions, Roman numeral analysis, macro analysis, figured bass notation, cadences, and elements of melodic organization.
Prerequisite: The ability to read music and/or play an instrument. Concurrent enrollment in MUSC 111 is required.

MUSC 102 W  5 credits
Theory and Musicianship II
Continues studies in the discipline of music theory. Focuses on musical texture and textural reduction, species counterpoint, voice leading in the 4-part chorale, harmonic progressions, harmonic rhythm, and the dominant 7th chord.
Prerequisite: MUSC 101 Concurrent requirement: MUSC 112.

MUSC 103 S  5 credits
Theory and Musicianship III
Furthers studies in the discipline of music theory. Focuses on leading-tone 7th chords, non-dominant 7th chords, secondary dominant and secondary leading-tone chords, modulation, basic two-part (binary) form, and basic three part (ternary) form.
Prerequisite: MUSC 102. Concurrent requirement: MUSC 113.

MUSC& 105 F,W,Sp  5 credits
Music Appreciation
Includes history, development of music, and music appreciation. Part of the course is the study of the music of foreign cultures. Lectures, readings, and recordings provide students with background for understanding and appreciation of significant musical styles of many cultures and historical periods.

MUSC 106 F  2 credits
Group Piano Instruction
Offers study of scales, intervals, chords, and simple exercises in improvisation for those who want basic keyboard skills. Students may enroll any quarter at any level. Elective for non-music majors. Required for non-keyboard music majors unless competency demonstrated.

MUSC 107 W  2 credits
Group Piano Instruction
Offers study of scales, intervals, chords, and simple exercises in improvisation for those who want basic keyboard skills. Students may enroll any quarter at any level. Elective for non-music majors. Required for non-keyboard music majors unless competency demonstrated.

MUSC 108 Sp  2 credits
Group Piano Instruction
Offers study of scales, intervals, chords, and simple exercises in improvisation for those who want basic keyboard skills. Students may enroll any quarter at any level. Elective for non-music majors. Required for non-keyboard music majors unless competency demonstrated.

MUSC 111 F  1 credit
Ear Training I
Supplements the musicianship portion of the MUSC 101 coursework. Introduces the major solfege system and the art of sight singing in general, focusing on step-wise melodies with simple meters in major keys. Introduces the art of music dictation, or the ability to notate music upon hearing it, by focusing on intervals (pitch pairs), as well as rhythms and melodies in simple meters.

MUSC 112 W  1 credit
Ear Training II
Supplements the musicianship portion of the MUSC 102 coursework. Reinforces the major solfege system and introduces sight singing melodies with skips on the tonic triad in compound meters. Broadens music dictation skills by focusing on increasingly wider intervals (pitch pairs), as well as more complex melodies and rhythms in simple meter with beamed 8ths notes and dotted notes.
Prerequisite: MUSC 111. Concurrent requirement: MUSC 102.

MUSC 113 Sp  1 credit
Ear Training III
Supplements the musicianship portion of the MUSC 103 coursework. Introduces the minor solfege system and explores sight singing melodies with skips on the dominant triad in a variety of meters. Explores increasingly advanced music dictation by focusing on sets of intervals (pitchgroups) and the notation of rhythms and melodies in compound meters with beamed 8th and 16th notes.
Prerequisite: MUSC 112. Concurrent requirement: MUSC 103.
MUSC 117 Sp 1-5 credits
Music Cultures of the World:DIV
H,D
Examines the vast array of musical styles from around the world. This course focuses on representative music of the non-Western world, and touches on the influences of World music in America, with an emphasis on the cultural background of each genre.

MUSC 119 F 5 credits
American Music:DIV
H,D
Examines the development of American popular music from its European and early American influences, to the present with an emphasis on the cultural context of specific genres. This course focuses on the most influential performers, recording artists, producers and labels in the United States.

MUSC 121 F,W,Sp,S 2 credits
Beginning Guitar
Presents musical rudiments which include melody, rhythm, notes, scales, intervals, chords and simple exercises in improvisation for those who want basic guitar skills. Students will perform with the class and in a duo with a class member. Prerequisite: Instructor permission.

MUSC 126 F,W,Sp 1 credit
Applied Music I
Includes individual lessons each week. No fee is charged when lessons are provided by regular faculty. Students who study with other teachers make their own financial arrangements and pay their teachers directly. A-Piano; B-Brass; G-Guitar; O-Organ; P-Percussion; S-String; V-Voice; W-Woodwind.
Prerequisite: Instructor permission, minimum proficiency in instrument or voice.

MUSC 130 F,W,Sp 2 credits
Jazz Ensemble
H, P
Preparation and performance of literature from the jazz idiom appropriate from small to large jazz ensemble for required on and off campus concerts. Jazz literature from the swing era to the present will include bebop, rock, funk, fusion and blues. Prior knowledge of jazz improvisation not required. Open to trumpet, trombone, all saxophone, drum, bass, and guitar players with strong musical skills and good music reading abilities. This course may be repeated for credit up to seven quarters.
Prerequisite: Audition or approval by instructor.

MUSC 134 F,W,Sp 1 credit
String Chamber Music
H, P
Rehearsal and performance of string chamber music. Participants receive weekly instruction in small ensemble performance, musicianship, and string instrument technique. Activities of this ensemble may include performance for concerts, events on campus, and events in the community. Course may be repeated up to six times.
Prerequisite: Instructor permission.

MUSC 135 F,W,Sp 1 credit
Orchestra
H,P
Offers participation in the Southwest Washington Symphony, a student/community orchestra, which rehearses and performs standard symphonic literature. Admission is by audition. The course may be repeated for credit up to seven quarters.
Prerequisite: Instructor permission.

MUSC 141 F 1.5 credits
Concert Choir I
H,P
Introduces students to the fundamental techniques and principles of integrating voice and music in an ensemble setting. Students will perform music in a variety of languages, from various genres, eras and styles, ranging from Masterworks to Show tunes. Ensemble will perform a minimum of one concert per quarter, and all performances are mandatory. The course can be taken up to two times. This course will transfer to any four year institution as an Elective or a Humanities credit.
Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 142 W 1.5 credits
Concert Choir II
H,P
Demonstrates the fundamental techniques and principles of integrating voice and music in an ensemble setting. Students will perform music in a variety of languages, from various genres, eras and styles, ranging from Masterworks to Show tunes. Ensemble will perform a minimum of one concert per quarter, and all performances are mandatory. The course can be taken up to two times. This course will transfer to any four year institution as an Elective or a Humanities credit.
Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 143 Sp 1.5 credits
Concert Choir III
H,P
Explores the fundamental techniques and principles of integrating voice and music in an ensemble setting. Students will perform music in a variety of languages, from various genres, eras and styles, ranging from Masterworks to Show tunes. Ensemble will perform a minimum of one concert per quarter, and all performances are mandatory. The course can be taken up to two times. This course will transfer to any four year institution as an Elective or a Humanities credit.
Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 145 F,W,Sp 1 credit
Beginning Voice
H
Introduces the art of singing, with focus on the development of healthy, efficient vocal production (breath support, vowel alignment, range extension, tone color), diction, song interpretation and performance etiquette. Students will become familiar with the structure and mechanics of the voice through study, discussion, practice and solo performances. Provides students with the skills needed to prepare and perform vocal literature.
MUSC 150  F,W,Sp  2 credits
Symphonic Band  H,P
Rehearsal and performance of symphonic band literature. Participants receive weekly instruction in musicianship and large ensemble performance. Activities of this course may include performance in concerts, commencement, other campus events, and events in the community. Course may be repeated up to seven times for credit.
Prerequisite: Instructor permission. Concurrent requirements: MUSC 126/226 Applied Music (individual instruction).

MUSC 151  F  1.5 credits
Show Choir I  H,P
Introduces students to the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit.
Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 152  W  1.5 credits
Show Choir II  H,P
Demonstrates the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit.
Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 153  Sp  1.5 credits
Show Choir III  H,P
Explores the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit.
Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 170  F  2 credits
Jazz Improvisation  H,P
Instructs instrumental improvisation for dance combo, jazz ensemble, and accompaniment. Rhythm section, brass, and single reed instruments are emphasized.
Prerequisite: MUSC 101 or instructor permission.

MUSC 174  F,W,Sp,S  2 credits
Jam Band 101  H,P
Explores and develops small group performance skills through a variety of genres, including rock/pop/blues with an emphasis on arrangement and composition. Vocalists and instrumentalists (drum, guitar, bass, keyboards, etc.) will form groups and arrange existing and original compositions. The course will culminate in a performance and recording. Proficiency in voice or instrument required.
Prerequisite: Instructor permission.

MUSC 197  F,W,Sp,S  1-5 credits
Rehearsal and Performance I  H,P
Provides experience for students who participate in the LCC musical concerts, performances, and/or productions not associated with current enrollment in a music course. This includes both instrumental and vocal performers, composers, designers, accompanists, and technical and support personnel. Students must successfully complete the rehearsal process through the final performance.
Prerequisite: Instructor permission.

MUSC 209  W  5 credits
The Blues Culture:DIV  H,D
Examines the uniquely African-American musical development of the Blues from its roots in work-songs to its influence on Rock and Roll, Jazz and popular music as a whole. This course focuses on the chronology and cultural context of the Blues.

MUSC 222  F,W,Sp  2 credits
Opera Workshop  H,P
Provides intermediate to advanced singers an opportunity to perform opera, operetta and musical theatre scenes, and at the same time, develop their singing, acting, and stage movement skills. Students will memorize and perform staged solos, duets, and small ensembles in a variety of languages and will be expected, with coaching, to interpret and portray the content of each piece regardless of language. This course may be taken up to 6 times.
Prerequisite: Instructor permission.

MUSC 226  F,W,Sp  1 credit
Applied Music II  H,P
Includes weekly individual lessons for more advanced students. No fee is charged when lessons are provided by regular faculty. Students who study with other teachers make their own financial arrangements and pay their teachers directly. A-Piano; B-Brass; G-Guitar; O-Organ; P-Percussion; S-String; V-Voice; W-Woodwind.
Prerequisite: Instructor permission, proficiency in instrument or voice.
MUSC 241 F 1.5 credits
Concert Choir IV
Distinguishes the fundamental techniques and principles of integrating voice and music in an ensemble setting. Students will perform music in a variety of languages, from various genres, eras and styles, ranging from Masterworks to Show tunes. Ensemble will perform a minimum of one concert per quarter, and all performances are mandatory. The course can be taken up to two times. This course will transfer to any four year institution as an Elective or a Humanities credit. Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 242 W 1.5 credits
Concert Choir V
Expands on the fundamental techniques and principles of integrating voice and music in an ensemble setting. Students will perform music in a variety of languages, from various genres, eras and styles, ranging from Masterworks to Show tunes. Ensemble will perform a minimum of one concert per quarter, and all performances are mandatory. The course can be taken up to two times. This course will transfer to any four year institution as an Elective or a Humanities credit. Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 243 Sp 1.5 credits
Concert Choir VI
Covers a culmination of the fundamental techniques and principles of integrating voice and music in an ensemble setting. Students will perform music in a variety of languages, from various genres, eras and styles, ranging from Masterworks to Show tunes. Ensemble will perform a minimum of one concert per quarter, and all performances are mandatory. The course can be taken up to two times. Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 251 F 1.5 credits
Show Choir IV
Distinguishes the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit. Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 252 W 1.5 credits
Show Choir V
H,P
Expands on the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit. Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

MUSC 253 Sp 1.5 credits
Show Choir VI
H,P
Further expand on the fundamental techniques and principles of integrating voice, music and dance into a performance show choir. Students will sing (from memory) and perform beginner/intermediate choreography of music from a variety of styles ranging from Broadway and Jazz to Contemporary music. Ensembles perform a minimum of one concert per quarter, and all performances are mandatory. This course can be taken up to two times. This course will transfer to any four-year institution as an Elective or a Humanities credit. Prerequisite: There are no prerequisites for this course; students can step into the sequence at any time. Instructor permission required.

Nursing (NURS)

NURS 090 8 credits
Nursing Assistant
Provides the content and experiences for students to achieve mastery of the state-defined competencies required to assist in giving basic nursing care to residents/clients under the supervision of a licensed nurse.

NURS 101 5 credits
Nursing Foundations
Presents concepts that form the foundation of nursing practice and the roles of provider of care, manager of care, and member of the discipline of nursing. Topics include: the nursing process; aging and elder care; palliative and end-of-life care; oxygenation; basics of fluid, electrolyte, and acid base balance; nutrition; pharmacology; antibiotics; pain; gastrointestinal health; wounds and skin care. Prerequisite: Admission to the nursing program. Admission criteria is posted on the web. Concurrent requirement: NURS 111.
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NURS 102</strong></td>
</tr>
<tr>
<td>Basic Nursing I</td>
</tr>
<tr>
<td><strong>NURS 103</strong></td>
</tr>
<tr>
<td>Basic Nursing II</td>
</tr>
<tr>
<td><strong>NURS 104</strong></td>
</tr>
<tr>
<td>Family Nursing</td>
</tr>
<tr>
<td><strong>NURS 111</strong></td>
</tr>
<tr>
<td>Nursing Foundations - Clinical</td>
</tr>
<tr>
<td><strong>NURS 112</strong></td>
</tr>
<tr>
<td>Basic Nursing I - Clinical</td>
</tr>
<tr>
<td><strong>NURS 113</strong></td>
</tr>
<tr>
<td>Basic Nursing II - Clinical</td>
</tr>
<tr>
<td><strong>NURS 114</strong></td>
</tr>
<tr>
<td>Family Nursing - Clinical</td>
</tr>
<tr>
<td><strong>NURS 201</strong></td>
</tr>
<tr>
<td>Advanced Comprehensive Nursing I</td>
</tr>
<tr>
<td><strong>NURS 202</strong></td>
</tr>
<tr>
<td>Advanced Comprehensive Nursing II</td>
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<tr>
<td><strong>NURS 203</strong></td>
</tr>
<tr>
<td>Advanced Comprehensive Nursing III</td>
</tr>
</tbody>
</table>
NURS 209  3 credits
Nursing Success
Strengthens nursing skills and knowledge to promote success in upper level nursing courses. Reviews selected nursing skills, care planning, dosage calculations, legal concepts and professional issues. Familiarizes the student with LCC Nursing Program policies and clinical requirements, including the clinical setting.
Prerequisite: Admission to the nursing program.

NURS 221  5 credits
Advanced Comprehensive Nursing Clinical I
Provides advanced opportunities to apply knowledge and concepts learned in NURS 201 and previous courses. Cultivates critical thinking and enhances skill in the performance of nursing care as provider of care, manager of care, and member of the discipline of nursing at the beginning registered nurse level. Community and acute care settings are utilized. Includes advanced intravenous and concepts. Introduces delegation at the registered nurse level.
Prerequisite: NURS 104, NURS 114 with a grade of C or better. Concurrent requirement: NURS 201.

NURS 222  5 credits
Advanced Comprehensive Nursing Clinical II
Provides additional advanced opportunities to apply knowledge and concepts learned in NURS 202 and previous courses. Expands critical thinking and increases skill in the performance of nursing care as provider of care, manager of care, and member of the discipline of nursing at the beginning registered nurse level. Expands knowledge of nurse delegation. Community and acute care settings are utilized.
Prerequisite: NURS 201 and 221 with a grade of C or better. Concurrent requirement: NURS 202.

NURS 223  5 credits
Advanced Comprehensive Nursing Clinical III
Prepares students for autonomous nursing practice by providing opportunities to integrate and apply knowledge learned in NURS 203 and previous courses, under the supervision of an assigned registered nurse preceptor. Reinforces critical thinking and increases skill at the beginning registered nurse level as provider of care, manager of care, and member of the discipline of nursing, preparing students for autonomous nursing practice. Expands skills in nurse delegation.
Prerequisite: NURS 202 and 222 with a grade of C or higher. Concurrent requirement: NURS 203.

NURS 241  4 credits
Essential Concepts of Nursing Practice
Provides content essential to effective and safe registered nursing practice. Concepts of leadership and management are included. Nursing delivery systems, standards of care, quality management, and evidence-based practice are described. The course includes an in-depth review and application of the nursing process. Topics include community-based nursing, culture and ethnicity, nutrition, pharmacology, pain, safety, and infection control.
Prerequisite: Admission to the nursing program.

NURS 242  3 credits
Nursing Throughout the Lifespan
Builds on previous nursing knowledge to present concepts essential to the provision and management of nursing care of patients throughout the lifespan. Topics include cultural influences on health, assessment, patient teaching, growth and development, care of the family. Reviews the nursing care of the pregnant and postpartum patient. Discusses strategies to achieve optimal health for patients of all ages.
Prerequisite: NURS 241 with a grade of C or above or concurrent enrollment.

NURS 243  3 credits
Behavioral Health
Provides knowledge essential to provide and manage nursing care of patients with behavioral health issues. Promotes understanding of mental health and mental illness. Presents strategies in nursing care to support the emotional, mental, and social well-being of the patient and their families.
Prerequisite: NURS 242.

NURS 244  4 credits
Comp Med Surg Nursing I
Using a body systems approach, explores the etiology, pathophysiology, diagnostic and laboratory studies, health promotion, health assessment, pharmacologic interventions, and nursing management essential to safe and effective nursing care of patients with various health challenges. Topics include nursing management of patients with disorders of the respiratory, cardiovascular, vascular/lymphatic, neurological, urinary/renal, hepatobiliary/pancreatic, and gastrointestinal systems, as well as acid-base/fluuid-electrolyte balance.
Prerequisite: NURS 243 with a grade of C or above or concurrent enrollment.

NURS 245  4 credits
Comp Med Surg Nursing II
Using a body systems approach, continues to explore the etiology, pathophysiology, diagnostic and laboratory studies, health promotion, health assessment, pharmacologic interventions, and nursing management essential to safe and effective nursing care of patients with various health challenges. Topics include nursing management of patients with disorders of the musculoskeletal, dermatologic, immune, metabolic/endocrine, hematologic, reproductive, visual/auditory systems, and cancer.
Prerequisite: NURS 244 with a grade of C or higher.

NURS 246  2 credits
Skills Laboratory
Provides opportunities to develop and enhance proficiency in nursing skills essential to safe and effective nursing practice as provider of care, manager of care, and member of the discipline of nursing, at the beginning registered nurse level.
Prerequisite: NURS 242 Concurrent requirements: NURS 243 or NURS 245.
NURS 247  5 or 10 credits
Clinical Practicum
Provides advanced opportunities to apply knowledge and concepts learned in previous courses. Expands critical thinking and increases skill in the performance of nursing care as provider of care, manager of care, and member of the discipline of nursing at the beginning registered nurse level. Expands knowledge of nurse delegation. Community and acute care settings are utilized. Prerequisite: NURS 246.

NURS 248  5 credits
Advanced Clinical Practicum
Prepares students for autonomous nursing practice by providing opportunities to integrate and apply knowledge learned in previous courses, under the supervision of an assigned registered nurse preceptor. Reinforces critical thinking and increases skill at the beginning registered nurse level as provider of care, manager of care, and member of the discipline of nursing, preparing students for autonomous nursing practice. Expands skills in nurse delegation. Prerequisite: NURS 247 or concurrent enrollment.

Nutrition (NUTR)

NUTR& 101  5 credits
Nutrition  NS
Develops an understanding of the importance of the science of nutrition and dietary recommendations to maintenance of a healthy life. Students will learn the principles of nutrition as they apply to macro-nutrients and metabolic pathways. Application of vitamins, minerals, and special nutritional requirements at different stages of the life cycle, as well as current issues in nutrition will be considered. This course does not include a lab.

Oceanography (OCEA)

OCEA& 101  5 credits
Introduction to Oceanography  NSL
Emphasizes principles and processes governing the ocean and its interactions with the surrounding physical environment. Covers topics from physical, chemical, biological and geological oceanography, including origin and evolution of the ocean basins, seafloor sediments, seawater, currents, waves, tides, marine life, and human impacts. Laboratory involves use of globes, charts, and graphs, sediment and biological samples. A field trip may be required.

Philosophy (PHIL)

PHIL& 101  5 credits
Introduction to Philosophy  H
Analyzes essential philosophical questions such as the one and/or many, what is truth, what is real being, etc. Pursues various Western attempts at their answers along with students’ own personal approaches. Prerequisite: ENGL& 101.

PHIL 210  5 credits
Ethics  H
Critically examines major Western philosophical answers to the questions of the good and how to achieve it. Application to some contemporary problems is also covered. Prerequisite: ENGL& 101.

PHIL 260  5 credits
Philosophy of Religion  H
Offers a critical, philosophic examination of the nature of religious beliefs, the functions of religious language, the arguments for the existence of God, attributes of God, the possible psychological and sociological origins of religions, the problem of evil, and the immortality of the soul, and some comparisons and contrasts between Eastern and Western religions. Prerequisite: ENGL& 101.

Physical Education (PHED)

PHED 104, 204  1 credit
Pilates and Stretch
Strength and flexibility exercises practiced with Pilates routine to create a balanced and effective program. Emphasis on core strength, posture, balance and toning.

PHED 105, 205  1 credit
Pilates & Yoga - Beginning
Pilates and yoga routines will be practiced together to create a balanced and effective strength and flexibility workout. The exercises will emphasize core strength, back strength, posture, balance, and toning major muscle groups.

PHED 106  1 credit
Yoga for Beginners
Introduces yoga routines and poses for a balanced and effective strength and flexibility workout. Emphasizes core strength, back strength, posture, balance, and toning major muscle groups. Encourages students to link the body and the mind through the poses, routines and meditation time. Students should bring their own yoga mat to class.

PHED 110, 210  2 credits
Circuit Training
Develops the basic components of physical fitness for students through participation in an aerobic circuit weight training program. The super-circuit aerobics program utilizes a combination of endurance and strength machines to provide one of the most effective conditioning methods known for developing baseline levels of physical fitness.
**PHED 120, 220** 2 credits  
**Cross Training**  
Introduces the fundamental theories of cross-training for various types of activities. Implements individualized workout routines needed to better your lifetime fitness whether it is strength training, powerlifting, conditioning or endurance. Students will increase strength, fitness and conditioning by taking this class. Students will define and design a workout program that will help them attain their fitness goals.

**PHED 121 F,W,Sp,S** 1 credit  
**Beginning Foil Fencing**  
Presents the skills, strategies, rules, and physical conditioning for the competitive or leisure pursuit of fencing.

**PHED 122 F,W,Sp,S** 1 credit  
**Intermediate Foil Fencing**  
Advancement of the skills, strategies, rules, and physical conditioning beyond the basics for competitive or leisure pursuit.  
Prerequisite: PHED 121 or instructor permission.

**PHED 125 F,W,Sp,S** 1 credit  
**Boot Camp**  
Provides a well-rounded, full body workout in every class. Students will work on cardiorespiratory endurance, muscular strength and endurance, body composition and flexibility. Students will keep their heart rates elevated while learning a variety of fitness exercises and using different pieces of fitness equipment such as: kettle bells, stability balls, stretch bands, weighted bars and medicine balls. Class format will include large group, stations, relays and more. Core workouts, pilates and yoga will also be incorporated into this class.

**PHED 126, 226 F,W,Sp** 1-2 credits  
**Aerobic Exercise**  
Guides students through rhythmical and continuous exercise performed to music. Every student, no matter what age or body type, will be provided the opportunity to improve their cardiorespiratory endurance through participation.

**PHED 127, 227 F,W,Sp** 1-2 credits  
**Zumba**  
Fuses hypnotic Latin rhythms and easy-to-follow moves. The routines feature interval training sessions, where fast and slow rhythms and resistance training are combined to tone and sculpt your body while burning fat.

**PHED 128, 228 F,W,Sp** 1-2 credits  
**Weight Training**  
Improves strength, physical conditioning, and performance through correct use of universal equipment, free weights and cardiorespiratory equipment. Emphasis will be on health and fitness education. Each student will design a program specific to his or her goals for the quarter.

**PHED 129, 229 F,W,Sp** 1-2 credits  
**Aqua Zumba**  
Blends the Zumba formula and philosophy with traditional aqua fitness disciplines into a safe, challenging, water-based workout that’s body-toning and cardio-conditioning. Lap swim is also available during this time.

**PHED 130, 230** 1 credit  
**Swimming**  
Provides instruction of the basic swimming strokes, personal safety skills and conditioning programs for muscular and cardiovascular endurance of the swimmer. Students will attend this class at the Mark Morris pool.

**PHED 135, 235 F,S** 1-2 credits  
**Fitness Walking**  
Utilizes walking in developing the health-related components of physical fitness. Emphasis will be placed on cardiorespiratory endurance through low-impact, moderate intensity exercise.

**PHED 139 F,W,Sp,S** 1-2 credits  
**Train for a Race**  
Promotes instruction, coaching and experience in training for a race (5k, 10k, adventure run). Workouts will include walking, running, cross-training, obstacle training, strength training and team building. All fitness levels are welcome. If students choose to participate in a race during the quarter, signing up for and cost of the event is the responsibility of the student.

**PHED 140, 240 F** 1 credit  
**Basketball: Men**  
Provides opportunity for students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program.

**PHED 141, 241 F** 1 credit  
**Basketball: Women**  
Provides an opportunity for the students to learn basketball skills, strategies, rules of play and to participate in a basketball conditioning program.

**PHED 145 W** 3 credits  
**Softball Coaching Theory**  
Addresses philosophy, technique, strategy, and knowledge. Progresses from basic theories through sophisticated situational theories and strategies. The course is designed for any level of play or coach in fast-pitch softball.

**PHED 146, 246 F** 1 credit  
**Fastpitch Softball-Women**  
Presents the opportunity to learn fastpitch skills, strategies, and rules of play. Students will participate in a softball-conditioning program designed for the sport-related needs.
PHED 147, 247 Sp 2 credits
Applied Fastpitch Softball-Women
Provides students the opportunity to demonstrate fastpitch softball skills, strategies, rules of play and participation in a softball-conditioning program.
Prerequisite: Instructor permission.

PHED 149, 249 F 2 credits
Applied Soccer-Women
Provides students the opportunity to demonstrate soccer skills, strategies, and rules of play and to participate in a conditioning program.
Prerequisite: Instructor permission.

PHED 152, 252 F,W,Sp,S 1-2 credits
Personalized Fitness
Requires students to plan and execute an individual exercise program designed specifically to meet personal goals and objectives related to physical fitness. Students may utilize Lower Columbia’s exercise facility or may choose to participate in off-campus activities.

PHED 160, 260 Sp 1 credit
Baseball
Enables students the opportunity to learn basic baseball skills, strategies and rules of play. A strict baseball-conditioning program will be emphasized.

PHED 162, 262 Sp 2 credits
Applied Baseball
Provides students the opportunity to demonstrate baseball skills, strategies, rules of play and to participate in a baseball conditioning program.
Prerequisite: Instructor permission.

PHED 164, 264 W 2 credits
Applied Basketball-Men
Gives students the opportunity to demonstrate basketball skills, strategies, rules of play and to participate in a basketball conditioning program.
Prerequisite: Instructor permission.

PHED 165, 265 W 2 credits
Applied Basketball-Women
Gives students the opportunity to demonstrate basketball skills, strategies, rules of play and to participate in a basketball conditioning program.
Prerequisite: Instructor permission.

PHED 167, 267 F 2 credits
Applied Volleyball
Gives students an opportunity to demonstrate volleyball skills, strategies, and rules of play and to participate in a volleyball-conditioning program.
Prerequisite: Instructor permission.

PHED 171 F,Sp 3 credits
Prevention and Care of Athletic Injuries
Provides training in basic prevention and care of athletic injuries. Includes an introduction to the field of sports medicine, organization and administration of a sports medicine program, recognition of common athletic injuries, evaluation and treatment protocols, rehabilitation techniques and emergency procedures. Basic wrapping, taping, and bracing techniques will be studied and practiced. Basic anatomy, physiology, and infection control will be included.

PHED 190 W 3 credits
Baseball Coaching Theory
Addresses philosophy, technique, drill, application, demonstration, strategy and knowledge. Baseball coaching theory progresses from basic theories through situational theories. This course is designed for any level of player or coach of softball and baseball.

PHED 192 2 credits
Basketball Coaching Theory
Offers a philosophical and fundamental study of basketball as played at the college level and includes fundamental approaches, offensively and defensively, designed to produce winning teams.

PHED 215 F,Sp,$ 2 credits
Outdoor Adventure
Provides local outdoor fitness activities and opportunities to learn the importance of teamwork and outdoor adventure safety. Typical activities may include hiking, zip lining, kayaking, biking, orienteering, and team building activities. Actual activities may vary according to the season and equipment availability. Students must be in good physical condition before taking this course. For safety reasons, equipment rental agency policies may limit participation to persons 18 and older and who weigh less than 250 pounds. Equipment rental fees vary by quarter and activity, and are the responsibility of the student. Students are responsible for arranging their own transportation. Average additional cost ranges from $100 to $150 per student. Details about costs and specific activities will be provided at the first class session or by contacting the instructor.

PHED 216 W 2 credits
Winter Outdoor Adventure
Provides local outdoor fitness activities and opportunities to learn the importance of teamwork and winter outdoor adventure safety. Typical activities may include snowshoeing, winter camping, cross country skiing, winter safety, orienteering, and team building activities. Actual activities may vary according to the season and equipment availability. Students must be in good physical condition before taking this course. For safety reasons, equipment rental agency policies may limit participation to persons 18 and older and who weigh less than 250 pounds. Equipment rental fees vary by quarter and activity, and are the responsibility of the student. Students are responsible for arranging their own transportation. Average additional cost ranges from $100 to $150 per student. Details about costs and specific activities will be provided at the first class session or by contacting the instructor.
PHED 282  3 credits
Water Safety Instruction
Provides instruction in how to teach swimming and diving skills for infants through adults and is designed to prepare lifeguards, instructors, and pool administrators for employment as certified American Red Cross water safety instructors.

PHED 284  2 credits
Lifeguard Training
Provides explanations, demonstrations, practice and review of rescue skills essential for Lifeguards as well as develop participants speed, endurance, and technique in swimming and Lifeguard skills. This course meets the requirements for American Red Cross certification in Lifeguard Training and is open to students who pass qualifying tests in swimming.

Physical Science (PHSC)

PHSC 108  5 credits
Physical Science  NSL
Explores the everyday physical world through the study of matter, momentum and motion, forms of energy, electricity and magnetism. Physical laws are presented that describe the interaction of energy and matter that are seen in everyday life. Students will gain an understanding of the natural world and science as a field of study. Includes lab. Students cannot receive credit for both PHSC 108 and PHSC 109.

PHSC 109  5 credits
Energy and Matter: Physical Sciences  NSL
Explores energy and matter through the study of matter, momentum and motion, forms of energy, electricity and magnetism. Students will gain an understanding of the natural world and science as a field of study, as well as develop skills to apply and teach scientific principles in everyday life. Intended primarily for elementary education and early childhood education majors. Part of a three quarter sequence; students are not required to take entire sequence. Includes lab. Students cannot receive credit for both PHSC 109 and PHSC 108.

Physics (PHYS)

PHYS& 114  5 credits
General Physics I w/Lab  NSL
Provides the first quarter of a sequence for students in various health science, technology, and pre-professional areas. Student-initiated motion studies introduce the fundamental principles of mechanics through studies of kinematics, Newton’s Principles, energy and momentum conservation principles, and their rotational analogues. Students participate in supporting small group laboratory investigations.
Prerequisite: MATH 099 or TECH 099 and MATH 076 or equivalent working knowledge of elementary algebra and right triangle trigonometry, or instructor permission.

PHYS& 115  5 credits
General Physics II w/Lab  NSL
Incorporates both thermodynamics and electromagnetism, including active student investigations of temperature, heat and thermal energy, entropy, the properties of simple electric and magnetic fields, and simple AC and DC circuits. Classroom activities help students connect the nature and role of fundamental principles in physics with real everyday operations of those principles. Students learn operation and use of contemporary instrumentation in lab investigations.
Prerequisite: PHYS& 114 and MATH 099 or TECH 099 and MATH 076 or instructor permission.

PHYS& 116  5 credits
General Physics III w/Lab  NSL
Emphasizes the scientific development of fundamental principles through active student investigations of mechanical and electromagnetic waves, geometrical and physical optics, special relativity, particles, waves, the quantum theory of the atom, the physics of the nucleus, and elementary particle theory as time permits.
Prerequisite: PHYS& 115 or instructor permission.

PHYS 210  5 credits
The Environmental Physics of Energy  NSL
Solicits student descriptions of energy production, patterns of use, and the challenges posed by dwindling energy resources using the language of physics: work, power, energy, heat, and the Conservation of Energy Principle. Students explore the physical/technological bases of current/proposed technologies, along with current scientific discussions of environmental effects such as global warming and radiation. Students cannot receive credit for both ENGR 210 and PHYS 210.
Prerequisite: Algebraic, writing, and presentation skills; a previous distribution science course (e. g., PHYS& 100) would be helpful.

PHYS& 221  5 credits
Engineering Physics I w/Lab  NSL
Provides the first quarter of a calculus-based sequence for majors in the physical sciences, engineering, or mathematics. The Principles of Newtonian Mechanics are introduced through motion analysis, with subsequent application to problems involving particle and rigid body motion. Small groups carry out supporting lab investigations. Use of elementary calculus increases during the term.
Prerequisite: Completion of or concurrent enrollment in MATH& 151 or instructor permission.
COURSE DESCRIPTIONS

PHYS& 222  W  5 credits
Engineering Physics II w/ Lab  NSL
Incorporates study of the mechanics of fluids, oscillatory motion, thermodynamics, and electrostatics. Includes student investigations of waves, temperature, heat, entropy, electricity and electric current. Classroom activities help students connect the sweeping power of fundamental principles with real everyday engineering physics applications. Students operate and utilize contemporary instrumentation in lab investigations.
Prerequisite: PHYS& 221, MATH& 152 or instructor permission.

PHYS& 223  Sp  5 credits
Engineering Physics III w/ Lab  NSL
Incorporates electromagnetism and wave physics through active student investigation of magnetism, time varying magnetic fields, DC and AC circuits, electromagnetic waves, geometrical and physical optics. Small group lab projects support these contemporary topics.
Prerequisite: PHYS& 222 or instructor permission.

Political Science (POLS)

POLS& 101  F,W  5 credits
Intro Political Science  SS
Examines the foundations of political science: key political ideas, theories, processes, and institutions, and explores examples of these in today’s world.

POLS& 202  F,W,Sp,S  5 credits
American Government  SS
Studies the structure and functions of the government of the United States, with an evaluation of the United States as a democracy, in both theory and practice.
Prerequisite: ENGL&101.

POLS& 203  W  5 credits
International Relations  SS
Introduces the nature and basic principles of international politics, with an analysis of such concepts as imperialism, nationalism, internationalism, the causes of war, and conditions for peace.
Prerequisite: ENGL& 101.

POLS& 204  5 credits
Comparative Government  SS
Analyzes the political and economic systems and ideologies of capitalism, socialism, communism, and fascism within the context of the cultural traditions of Western Civilization and considers these systems as alternative methods of the allocation of political and economic power in society, with special emphasis given to the disparity between the stated objectives of these systems and their actual accomplishment. This course fulfills the requirements of the AA-DTA social science distribution list.

POLS 220  5 credits
The Law and Social Issues  SS
Studies lines drawn by democracies in the attempt to reconcile individual freedoms with the rights of the community. Analyzes and evaluates the basic problem of dealing with basic rights and liberties, freedom of expression, due process of law, and political and racial equality.

POLS 294, 295, 296, 297  1-5 credits
Selected Topics in Political Science I, II, III, IV
Examines topical or special issues in political science. Course theme and content change to reflect new topics, which are announced in the quarterly class schedule. This is an elective transfer course.

Process Control Manufacturing (PMFG)

PMFG 110  F  5 credits
Industrial Maintenance Fundamentals
Introduces essential elements of industrial maintenance. Provides an overview of the jobs and tasks generally performed in manufacturing operations. Fundamental topics covered include an overview of general types of industrial equipment, the proper use of a variety of hand tools and measuring instruments, and an exploration of fasteners, bearings, seals, and lubrication systems. Safety procedures including lock-out/tag-out of electrical/mechanical energy systems, sketching using ANSI standards, layout and machinery installation, and basic troubleshooting techniques are also covered.

PMFG 150  6 credits
Electrical and Electronic Fundamentals
Introduces the nature and principles of electricity and electrical/electronic devices. Focuses on general principles, safety, industrial applications, and includes topics related to both DC and AC circuits. Topics explored include basic theory and direct current circuits, measuring instruments, interpretation of electrical and schematic diagrams, ohms law, basic electrical circuit analysis, applied mathematical concepts used in solving for values in series and parallel circuits, electrical safety and basic magnetic concepts. Additional topics are alternating current circuits, the use of AC measuring instruments, single phase and three phase AC distribution systems, transformers, and an overview of basic electronic devices, their function, and common applications. The course is designed for individuals entering the electrical trades, maintenance personnel or production/process operators.
Prerequisite: MATH 088 or concurrent enrollment or instructor permission.
**COURSE DESCRIPTIONS**

**PMFG 151  5 credits**
**Process Control Equipment**
Provides an overview of process control equipment for operating personnel in industries utilizing process manufacturing techniques. Introduces the fundamentals of process control, instrumentation, control equipment, PLCs, process and instrumentation diagrams, and equipment fault identification and troubleshooting.
Prerequisite: Both MATH 088 and PMFG 150 strongly recommended.

**PMFG 152  5 credits**
**Process Control Systems**
Provides an overview of process control systems for operating personnel in industries utilizing process manufacturing techniques. Introduces the basics of control system equipment, process and instrumentation diagrams, and equipment fault identification and troubleshooting.
Prerequisite: PMFG 151 or instructor permission.

**PMFG 201  3 credits**
**Electrical Control Equipment**
Introduces the operation, troubleshooting, and adjustment of various types of electrical control equipment. Fuses, molded case circuit breakers, and control switches are covered. Includes basic principles of motor starters and troubleshooting of control circuits.
Prerequisite: PMFG 150 or instructor permission.

**PMFG 202  2 credits**
**Electric Motors**
Covers the concepts, maintenance, and testing of AC and DC motors. Includes a study of components and operation of a variety of AC motors and DC motors. Single-phase and three-phase motors are covered.
Prerequisite: PMFG 201 or instructor permission.

**PMFG 210  5 credits**
**Advanced Industrial Maintenance**
Explores more advanced industrial maintenance topics, including preventative maintenance, centrifugal pump repair, valve repair, rigging and lifting, vibration analysis, and shaft alignment. Safe work practices are stressed, and relevant safety topics are covered during the course.
Prerequisite: PMFG 110 or instructor permission.

**PMFG 220  5 credits**
**Introduction to Renewable Energy**
This course provides an introduction to renewable energy sources. Topics will include biomass for fuels and electricity generation, solar, wind, geothermal and hydroelectric energy. Students will compare technology, social, environmental and economic impacts of renewable energy. Upon completion, students will be able to demonstrate an understanding of renewable energy and its impact on humans and the environment.
Prerequisite: MATH 089 and ENGL 099 or higher or TECH 105 or instructor permission.

**Psychology (PSYC)**

**PSYC& 100  5 credits**
**General Psychology**
Studies the science of behavior and fosters understanding of human development, learning, motivation, emotions, reactions to frustration, mental health and therapy, perception, and personality.

**PSYC 140  3 credits**
**Introduction to Sport Psychology**
Emphasizes the psychological factors affecting individual behavior as it relates to sport performance and provides student athletes the resources to better understand, predict, and modify competitive sport performance as a result.

**PSYC& 200  5 credits**
**Lifespan Psychology**
Studies the physical, emotional, and social developmental behavior of the individual from childhood through adolescence, early adulthood, and late adulthood, and emphasizes specific stages encountered at various developmental levels.
Prerequisite: PSYC& 100 or instructor permission.

**PSYC 204  5 credits**
**Applied Psychology**
Studies applications of psychology in such areas as human motivation, business, industry, education, psychiatry, law, death and dying, combat, violence, and problems related to development.
Prerequisite: PSYC& 100 or instructor permission.

**PSYC 214  5 credits**
**Psychology of Adjustment**
Studies the nature of the personality, personality formation, and adjustment to environment. Dynamics of adjustment, normal and abnormal patterns of adjustment, the development of emotional, social, and intellectual competencies, and a survey of applicable theories of personality are included.
Prerequisite: PSYC& 100 or instructor permission.

**PSYC& 220  5 credits**
**Abnormal Psychology**
Presents a study of abnormal psychopathology, specifically a study of abnormal human behavior, its description, causes, and diagnosis. Emphasis on treatment and major diagnostic categories such as schizophrenia, personality, mood, and organic brain disorders.
Prerequisite: PSYC& 100 or instructor permission.
### Sociology (SOC)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC&amp; 101</td>
<td>F,W,Sp,S</td>
<td></td>
<td>Introduction to Sociology:DIV SS,D Examines the complexity of the sociological perspective to provide students with the conceptual tools essential to the development of a more complex understanding of the human condition. Students develop a comprehension of the role that social organization, socialization and social interaction plays in the formulation of social identity, a common conceptual understanding, social inequality and cultural diversity.</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Sp</td>
<td></td>
<td>Human Sexuality SS Presents examination of the scientific research that has led to a better understanding of human sexuality in its anatomical, physiological, sociological, cultural, and psychological aspects.</td>
</tr>
<tr>
<td>SOC 225</td>
<td>Sp</td>
<td></td>
<td>Race and Ethnicity:DIV SS,D Examines the complexities of race and ethnicity in America and around the world. Topics include the social construction of racial and ethnic identities, the historical patterns of racial and ethnic exclusion, and the role of race and ethnicity in the perpetuation of social inequality and the shaping of world events.</td>
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### Spanish (SPAN)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SPAN 097</td>
<td>2</td>
<td></td>
<td>Spanish Grammar for Beginners: Present Tense Verbs Enables understanding of verb conjugation in the present tense in Spanish. Presents minimal vocabulary and does not concern oral proficiency. While this course is self-directed, students may be assisted by a tutor or an instructor. Graded on a credit/no credit basis.</td>
</tr>
<tr>
<td>SPAN 098</td>
<td>1</td>
<td></td>
<td>Spanish Grammar for Beginners: Agreement of Nouns and Modifiers Enables understanding of nouns and modifiers in Spanish. Presents minimal vocabulary and does not concern oral proficiency. While this course is self-directed, students may be assisted by a tutor or an instructor. Graded on a credit/no credit basis.</td>
</tr>
<tr>
<td>SPAN 104</td>
<td>1-5</td>
<td></td>
<td>Introduction to Spanish in the Workplace Introduces Spanish, presenting realistic situations and specialized vocabulary needed for basic communication with Spanish speakers in the workplace. Personalized questions, grammar exercises, dialog activities, and role-playing provide students with numerous opportunities to apply points of language in a wide variety of practical contexts. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107).</td>
</tr>
<tr>
<td>SPAN 105</td>
<td>1-5</td>
<td></td>
<td>Introduction to Spanish in the Workplace Builds vocabulary and introduces more complex points of language, including idioms, grammar, and, especially, pronunciation. Provides additional opportunities for telephone and face-to-face communication in workplace settings. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107). Prerequisite: SPAN 104 or equivalent.</td>
</tr>
<tr>
<td>SPAN 106</td>
<td>1-5</td>
<td></td>
<td>Spanish in the Workplace Accumulates vocabulary and introduces additional verb forms and pronoun usage, which are essential to clear oral communication. Enables further telephone and face-to-face communication with clients and co-workers whose principle language is Spanish. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107). Prerequisite: SPAN 105 or equivalent.</td>
</tr>
<tr>
<td>SPAN 107</td>
<td>1-5</td>
<td></td>
<td>Spanish in the Workplace Increases fluency, concentrating on effective communication (listening and speaking), self-expression, and literacy. Within a particular domain, students will learn to interact with clients and co-workers whose principal language is Spanish. Within any of the vocabulary-specific domains, students will advance from one level to the next in sequence (SPAN 105, 106, and 107). Prerequisite: SPAN 106.</td>
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<tr>
<td>SPAN&amp; 121</td>
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<td>Spanish I:DIV Introduces Spanish, emphasizing basic vocabulary and points of language. Aiming at self-expression and literacy, this course engages students in reading, writing, listening, and speaking in the target language. Students will also acquire knowledge of the diverse social, ethnic, and cultural groups that use the language and observe how artistic expression reflects the diversity of cultural values.</td>
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<tr>
<td>SPAN&amp; 122</td>
<td></td>
<td></td>
<td>Spanish II:DIV Provides continuation of basic principles offered in SPAN&amp; 121, accumulates vocabulary, reinforces basic grammar, and increases fluency. Aiming at self-expression and literacy, this course engages students in reading, writing, listening, and speaking in the target language. Students will also acquire knowledge of the diverse social, ethnic, and cultural groups that use the language and observe how artistic expression reflects the diversity of cultural values. Prerequisite: SPAN&amp; 121 with a grade of C or better or two years of high school Spanish.</td>
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</tbody>
</table>
COURSE DESCRIPTIONS

SPAN& 123 F,W,Sp,S 5 credits
Spanish III:DIV H,D
Provides further development of basic skills, accumulates vocabulary, reinforces basic grammar, introduces new grammatical principles, and increases fluency. Aiming at self-expression and literacy, this course engages students in reading, writing, listening, and speaking in the target language. Students will also acquire knowledge of the diverse social, ethnic, and cultural groups that use the language and observe how artistic expression reflects the diversity of cultural values.
Prerequisite: SPAN& 122 with a grade of C or better or three years of high school Spanish.

SPAN& 221 F,W,Sp,S 5 credits
Spanish IV H
Provides an intensive review of vocabulary and basic points of language included in the first year, introduces new points, develops communication problem solving skills, and builds an extensive vocabulary pertinent to contemporary social and cultural issues.
Prerequisite: For enrollment in second-year Spanish courses, students must complete first-year college level Spanish.

SPAN& 222 F,W,Sp,S 5 credits
Spanish V H
Continues to build communication skills, accumulates vocabulary, and increase fluency, with added emphasis on literacy.
Prerequisite: SPAN& 221 or equivalent.

SPAN& 223 F,W,Sp,S 5 credits
Spanish VI H
Continues to build communication skills, accumulates vocabulary, and increase fluency, with added emphasis on literacy.
Prerequisite: SPAN& 222 or equivalent.

Speech (SPCH)

SPCH 104 F,Sp 5 credits
Interpersonal Communication H
Explores how communication develops and changes relationships. Addresses theories and principles of interpersonal communication, including perception, self concept, feedback, listening, nonverbal communication, empathy and disclosure, and handling conflict with an emphasis on skill building and improvement. Personal, family, friendship, and working contexts are considered.

SPCH 109 W 5 credits
Intercultural Communication:DIV H
Examines the intercultural aspects of human communication. Emphasizes the significance of communicating across cultural lines of cultural differences in today’s world. Focuses on cultural identity, differing behaviors and values, historical context, language and nonverbal expression, intercultural transitions, and conflict. Emphasizes application of theory and skills designed to increase competence in intercultural communication. Meets the diversity requirement.

SPCH 110 F,W,Sp,S 5 credits
Intro to Public Speaking H
Examines the planning, development, and delivery of informative and persuasive speeches. Emphasis is given to effective structure and support of ideas, establishing credibility, audience analysis, language use, speaker anxiety, verbal and nonverbal presentation skills, and listening. Self-critiques are also stressed.

SPCH 114 F,W,Sp,S 5 credits
Small Group Communication H
Introduces principles and processes of small groups and development of skills for participation and leadership in small group settings. Practice in problem solving, decision making, information sharing, and the and the relational aspects of small group work. Includes analysis and evaluation of project-based small group work. Students will apply small group communication concepts to analyze their own work in a variety of structured discussions and activities.

SPCH 126, 127, 128, 226, 227, 228 F,W,Sp 2 credits
Competitive Public Speaking
Provides investigation and practice in background, format, procedures and evaluation criteria of forensics events. Students must participate in a minimum of two intercollegiate tournaments.

SPCH 136, 137, 138, 236, 237, 238 F,W,Sp 2 credits
Intercollegiate Debate
Provides investigation and practice in oral problem solving through the debate format. The student is expected to attend a minimum of two debate tournaments.

SPCH 209 Sp 5 credits
Rhetoric Criticism & Popular Culture:DIV H
Introduces methods of rhetorical criticism including neo-Aristotelian, dramatistic, Marxist, and feminist. Applies methods to popular culture artifacts (e.g., film, television, advertising, video games, and graphic novels). Themes include how popular culture influences life by defining cultural, gender, class and race roles. Students will apply the rhetorical criticism methods to identify persuasion in popular culture that influences their thoughts, beliefs, and actions.
Prerequisite: ENGL& 101 or equivalent.
SPCH 290  F,W,Sp  1 credit
Forensic Management and Organization
Provides instruction and practical experience in the setup, administration, and judging of forensics tournaments. Graded on a pass/fail basis.

Technology Education (TECH)

TECH 075  5 credits
Introduction to Technical Reading/Writing
Offers basic writing/reading skills for technical students. Skills include writing complete sentences, improving spelling, and using writing as a form of communication. Additionally, students will learn how to read technical materials effectively, expand vocabulary, and improve comprehension.

TECH 078  F,W,Sp,S  3 credits
Pre-College Math I
Covers operations on and applications of integers, fractions, and decimals. This is the first in a three quarter pre-college mathematics sequence which contains pre-college math modules 01-03. Credit cannot be earned for both TECH 078 and MATH 078. Prerequisite: Placement exam or instructor permission.

TECH 079  2 credits
Pre-College Math I
Covers operations on and applications of ratios, proportions, and percents. Also includes topics in measurement and geometry. This is the continuation of the first in a three quarter pre-college mathematics sequence which contains pre-college math modules 04-05. Credit cannot be earned for both MATH 079 and TECH 079. Prerequisite: MATH 078 with a C or better, placement exam, or instructor permission.

TECH 088  F,W,Sp,S  3 credits
Pre-College Math II
Covers solving linear equations and inequalities and an introduction to graphing. Techniques and strategies for problem solving are emphasized. This is the second in a three quarter pre-college mathematics sequence which contains pre-college math modules 06-08. Credit cannot be earned for both TECH 088 and MATH 088. Prerequisite: C or better in TECH 079 or MATH 079, placement exam, or instructor permission.

TECH 089  F,W,Sp,S  2 credits
Pre-College Math II
Covers operations on polynomials and factoring of polynomials. This is the continuation of the second in a three quarter pre-college mathematics sequence which contains pre-college math modules 09-10. Credit cannot be earned for both TECH 089 and MATH 089. Prerequisite: C or better in TECH 088 or MATH 088, placement exam, or instructor permission.

TECH 090  5 credit
Principles of Technology
Explores the mechanical, fluid, electrical, and thermal systems on which modern technology operates. Hands-on, real-world lab activities are integrated with mathematics and physics instruction to provide an understanding of the units of force, work, rate, resistance, and energy associated with each system.

TECH 097  5 credits
College-Ready English I
Introduces skills for reading college-level texts and writing college-level papers. Provides strategies for generating, developing, supporting, and organizing ideas, as well as revising for coherence, clarity, correctness, and documentation. This is an outcomes-based pathway to college-level composition courses.

TECH 098  3 credits
Pre-College Math III
Covers factoring polynomials and operations on rational and radical expressions. This is the third in a three quarter pre-college mathematics sequence which contains pre-college math modules 11-13. Credit cannot be earned for both MATH 098 and TECH 098. Prerequisite: MATH 089 or TECH 089 with a C or better, placement exam or instructor permission.

TECH 099  F,W,Sp,S  2 credits
Pre-College Math III
Covers solving and graphing quadratic equations and an introduction to exponential and logarithmic functions. This is the continuation of the third in a three course pre-college mathematics sequence which contains pre-college math modules 14-15. Credit cannot be earned for both TECH 099 and MATH 099. Prerequisite: C or better in TECH 088 or MATH 088, placement exam, or instructor permission.

TECH 100  F,W,Sp,S  5 credits
Advanced Principles of Technology NSA
Provides hands-on study of energy, power, and force transformers in mechanical, fluid, electrical and thermal energy systems. Includes a review of force, work, rate, and resistance. Students will learn through a combination of lab experiments and discussion of the physics and math related to each energy system. The application in industry of various concepts is also explored. Prerequisite: One year of high school principles of technology (certificate from instructor required), or TECH 090, or MATH 106 or higher.

TECH 170  4 credits
Statistical Process Control
Explores the use of statistical process control as a means of improving a process. Problem-solving techniques including brainstorming, Pareto diagrams, and cause and effect diagrams are also examined. Prerequisite: Recommended: MATH 106 or higher.
Welding (WELD)

WELD 071  F   1 credit
Welding Support I
Introduces shop safety practices and common welding techniques for related curriculums. The common welding techniques addressed will include oxy/fuel cutting and brazing, and basic welding. Concurrent enrollment in WELD 105 required.

WELD 072  W   1 credit
Welding Support II
Introduces shop safety practices and common welding techniques for related curriculums. The common welding techniques addressed will include oxy/fuel cutting and brazing, basic arc welding, and wire feed welding. Concurrent enrollment in WELD 105 required.

WELD 105  F,W,Sp,S   1-6 credits
Related Welding I
Studies shop safety practices and common welding techniques for related curriculums. The common welding techniques will include oxy-acetylene cutting and brazing, electrode arc welding, and wire feed welding.

WELD 151  F,W,Sp,S   1-6 credits
Introduction to Oxy-Acetylene
Covers basic principles, procedures, and safety in using oxy-acetylene equipment. Mild steel rod, brazing rod, soldering, temperatures, metal testing, fluxes, expansion, contraction and dry cutting. Projects are assigned to give practice in making basic welds.

WELD 152  F,W,Sp,S   1-10 credits
Introduction to Arc Welding
Studies basic principles, procedures, and safety in the use of welding equipment. Students must complete satisfactory vertical, flat, horizontal, and overhead welds using E6010. Projects are assigned to help develop student skills.

WELD 158  5 credits
Welding Theory and Fabrication
Covers theoretical and practical applications of welding processes and metal fabrication. Work on project is required outside of class.
Prerequisite: WELD 151, 152 or instructor permission.

WELD 221  F,W,Sp,S   10 credits
Wire Machine
Presents a general overview of various metallic inert gas (MIG) welding machines, including instructions on stainless steel, mild steel, aluminum, flux core wire welding, and machine troubleshooting and setup problems/safety.
Prerequisite: WELD 151, 152, 254, or instructor permission.

WELD 222  F,W,Sp,S   6 credits
Advanced Wire Machine
Prepares the student for successful employment in flux core wire welding. Emphasizes safety, care and use of equipment, types of testing (destructive and non-destructive), welding specifications and codes, welding procedures and qualification requirements, visual inspection, weld defects, and workmanship
Prerequisite: WELD 151, 152, 221, 254, 256, or instructor permission.

WELD 254  F,W,Sp,S   1-10 credits
Arc Welding
Continues arc welding procedures, rods, symbols, and metal testing using E7018 and different alloy rods and sizes. Students also work towards AWS/WABO certification.
Prerequisite: WELD 152 or instructor permission.

WELD 255  F,W,Sp,S   1-10 credits
Advanced Welding Processes
Provides training opportunity with tungsten inert gas (TIG) and aluminum, mild steel, stainless steel, and pipe.
Prerequisite: WELD 151, 152, 254, 256, or instructor permission.

WELD 256  F,W,Sp,S   1-10 credits
Advanced Welding Application
Studies maintenance, repair and production welding and provides a testing program and a service course for those desiring to complete a certification test meeting AWS or WABO specifications.
Prerequisite: WELD 152, 254, or instructor permission.